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MEMORANDUM

To: Michael Berkoff - U.S. EPA

REF. NO.: 056393-07

FROM: Aaron Stadnyk - CRA/cs/10

DATE: January 11, 2011

CC: 12th Street Landfill Technical Team:

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**RE: Remedial Action - Vertical Aquifer Sampling Results and Proposed Well Screen Intervals
for Groundwater Monitoring Well Installations
12th Street Landfill-Operable Unit No.4-Allied Paper/Portage Creek/Kalamazoo River
Superfund Site; Plainwell, Michigan**

The following memorandum was prepared by Conestoga-Rovers & Associates (CRA) to summarize the Vertical Aquifer Sampling (VAS) activities completed during November 2010 and to present the proposed well screen intervals for the installation of the groundwater monitoring wells, in accordance with the Final Design.

VAS was performed at a total of 10 proposed groundwater monitoring locations (MW-101 to MW-110), as presented on Figure 1. VAS sampling was conducted at each proposed monitoring well location in order to determine the depth interval that is representative of the highest concentrations of potential Site constituents present in groundwater, in accordance with the Final Design. Vertical profiling was performed at 5-foot intervals from the water table to a depth of 40 feet below the water table. VAS was performed using a Geoprobe groundwater sampler and low-flow sampling techniques, in accordance with the Final Design Report.

Groundwater samples were analyzed in the field for pH, oxidation-reduction potential (ORP), dissolved oxygen (DO), conductivity, temperature, and turbidity. Samples were collected and submitted for laboratory analysis of volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and total analyte list (TAL) metals. The VAS analytical results are presented in Table 1 through Table 10 and were compared to Michigan Act 451, Part 201 Groundwater: Residential and Industrial Commercial Generic Cleanup Criteria identified by MDEQ RRD Op Memo No. 1, updated January 23, 2006, pursuant to 1994 PA 451 as amended.

Based in general on the VAS analytical results, proposed well screen depth intervals at each groundwater monitoring well location were identified, as shown in Table 11. The proposed depth of each well screen

interval was selected based on an evaluation of the analytical data, which determined the VAS results that best represented the highest concentrations of potential landfill constituents present in groundwater at each location.

At each monitoring well location, the selection of each proposed screen interval was based on the presence of following parameters:

- Highest concentration of PCBs
- Presence of mercury
- Highest concentration of VOCs
- Highest concentration of TAL Metals

Based on the evaluation of the VAS analytical data, a total of 14 groundwater monitoring wells are proposed, including six shallow monitoring wells and eight monitoring wells installed to various depths. The installation of the well screen at each monitoring well location will be completed in accordance with the Final Design and United States Environmental Protection Agency (U.S. EPA) comments received on October 29, 2010

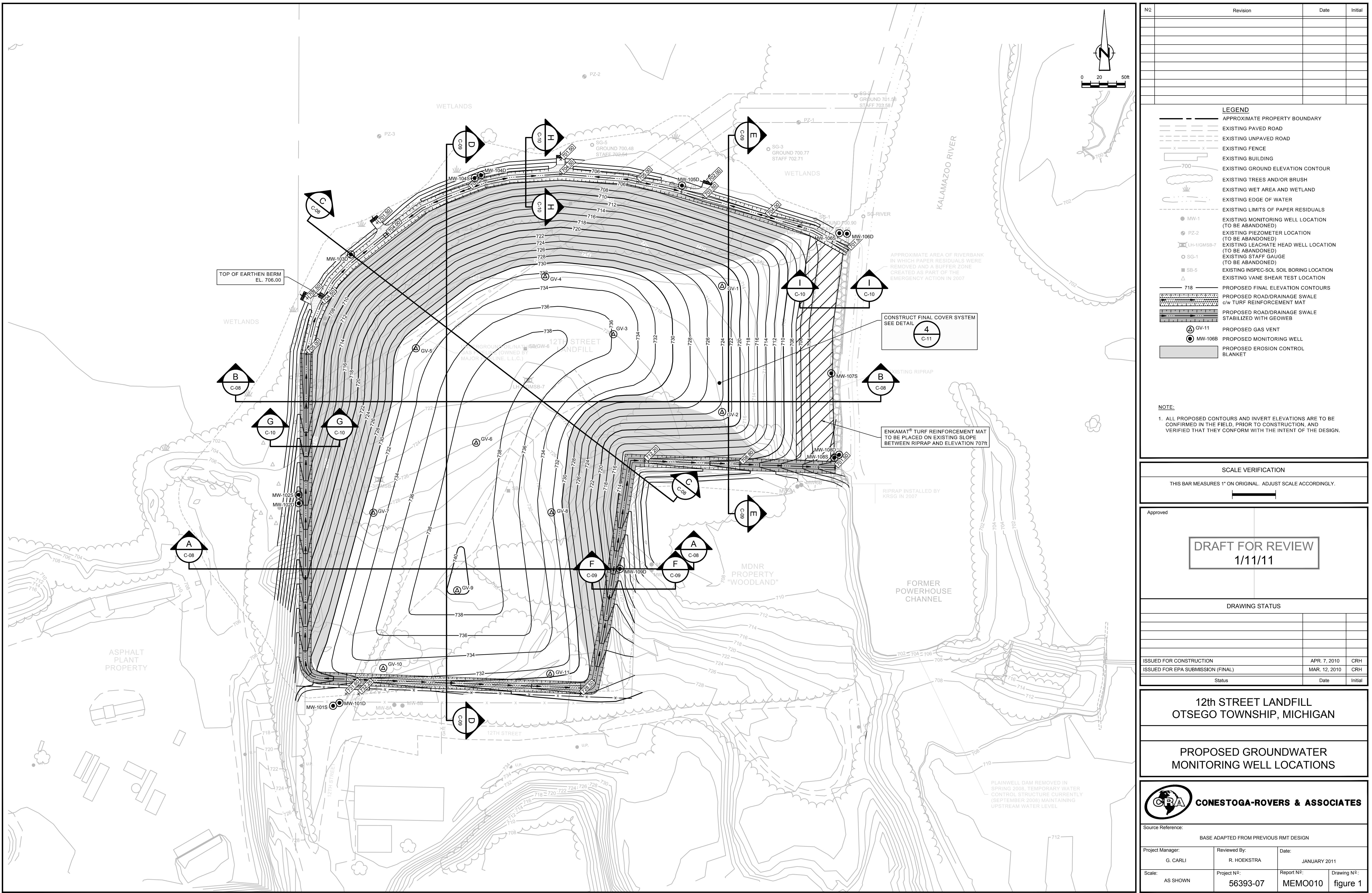


TABLE 1

MW-101
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾			MW 101	MW 101	MW 101	MW 101
	Units	a	b	c	VAS-56393-111010-DD-012 11/11/2010 (34-39) ft BGS (35.4-39) ft BGS	VAS-56393-111010-DD-010 11/10/2010 (39-44) ft BGS (40.4-44) ft BGS	VAS-56393-110910-DD-003 11/9/2010 (44-49) ft BGS (45.4-49) ft BGS
Metals							
Aluminum	ug/L	50	50		69.4 ^{ab}	2210 ^{ab}	1400 ^{ab}
Antimony	ug/L	6	6	130	0.032 J	0.162	0.312 N
Arsenic	ug/L	10	10	150	0.4 J	4.9	3.2 N
Barium	ug/L	2000	2000	1400	87.1	148	108
Beryllium	ug/L	4	4	41	0.01 J	0.239	0.096
Cadmium	ug/L	5	5	5.1	0.012 J	0.127	0.088
Chromium	ug/L	100	100	11	24.4 ^c	27.3 ^c	32.7 ^c
Cobalt	ug/L	40	100	100	0.567	7.480	9.140
Copper	ug/L	1000	1000	23	1.28	14.5	12.1
Iron	ug/L	300	300		1390 ^{ab}	24100 ^{ab}	13000 ^{ab}
Lead	ug/L	4	4	34	0.3	11.2 ^{ab}	7.180 ^{ab}
Magnesium	ug/L	400000	1100000		25600	52800	38700
Manganese	ug/L	50	50	5200	63.3 ^{ab}	1150 ^{ab}	853 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	19.1	21.9	28.4
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.006 J	0.019 J	0.022
Sodium	ug/L	120000	350000		23600	24100	23900
Thallium	ug/L	2	2	3.7	0.025	0.192	0.112
Vanadium	ug/L	4.5	62	12	0.20 U	7.92 ^a	4.31
Zinc	ug/L	2400	5000	310	2	42.5	23.5
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.040 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.50 U	0.060 J	0.060 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

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Sample Location:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾			MW 101	MW 101	MW 101	MW 101	
	Units	a	b	c	VAS-56393-11110-DD-012 11/11/2010 (34-39) ft BGS (35.4-39) ft BGS	VAS-56393-11010-DD-010 11/10/2010 (39-44) ft BGS (40.4-44) ft BGS	VAS-56393-110910-DD-003 11/9/2010 (44-49) ft BGS (45.4-49) ft BGS	VAS-56393-111010-DD-009 11/10/2010 (49-54) ft BGS (50.4-54) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.50 U	0.50 U	0.50 U	0.50 U
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	0.15 J	2.0 U
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U

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OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾				MW 101	MW 101	MW 101	MW 101
	Units	a	b	c	VAS-56393-11110-DD-012	VAS-56393-111010-DD-010	VAS-56393-110910-DD-003	VAS-56393-111010-DD-009
					11/11/2010 (34-39) ft BGS (35.4-39) ft BGS	11/10/2010 (39-44) ft BGS (40.4-44) ft BGS	11/9/2010 (44-49) ft BGS (45.4-49) ft BGS	11/10/2010 (49-54) ft BGS (50.4-54) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.43 J	1.8	0.16 J	0.41 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Field Parameters								
Conductivity, field	mS/cm				0.661	0.674	0.686	0.678
Dissolved oxygen (DO), field	mg/L				--	--	1.86	--
Oxidation reduction potential (ORP), field	millivolts				-93	-164	-193	-158
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.18	7.21	7.11	7.30
Temperature, field	Deg C				13.78	15.45	16.58	16.43
Turbidity (field)	NTU				19.7	211	1000 U	1000 U
Pump Intake	ft bgs				38	43	48	53
Pumping Rate	mg/min				160	240	125	150

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 1

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12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<i>Ground</i>	MW 101 VAS-56393-111010-DD-007	MW 101 VAS-56393-111010-DD-008	MW 101 VAS-56393-111010-DD-006	MW 101 VAS-56393-110910-DD-002	MW 101 VAS-56393-110910-DD-001
Sample Identification:		11/10/2010	11/10/2010	11/10/2010	11/9/2010	11/9/2010
Sample Date:		(54-59) ft BGS	(54-58) ft BGS	(59-64) ft BGS	(64-69) ft BGS	(69-74) ft BGS
Sample Depth:		(55.4-59) ft BGS	(55.4-58) ft BGS	(60.4-64) ft BGS	(65.4-69) ft BGS	(70.4-74) ft BGS
Screen Depth:						

Metals

Aluminum	ug/L	932 ^{ab}	962 ^{ab}	685 ^{ab}	1320 ^{ab}	2390 ^{ab}
Antimony	ug/L	0.167	0.171	0.187	0.396 N	0.744 N
Arsenic	ug/L	4.0	4.3	2.9	3.5 N	4.4 N
Barium	ug/L	99.4	101	90.9	106	344
Beryllium	ug/L	0.083	0.101	0.049	0.126	0.192
Cadmium	ug/L	0.047	0.049	0.051	0.089	0.766
Chromium	ug/L	32.5 ^c	32.3 ^c	37.1 ^c	15.7 ^c	32.5 ^c
Cobalt	ug/L	5.200	5.350	4.240	10.5	17.5
Copper	ug/L	11.3	11.9	11.4	17.4	58.0 ^c
Iron	ug/L	11800 ^{ab}	12600 ^{ab}	8670 ^{ab}	14100 ^{ab}	30500 ^{a,b}
Lead	ug/L	6.420 ^{ab}	6.720 ^{ab}	3.470	7.530 ^{ab}	17.3 ^{ab}
Magnesium	ug/L	34900	36200	30700	40600	41400
Manganese	ug/L	455 ^{ab}	480 ^{ab}	391 ^{ab}	937 ^{ab}	5280 ^{a,b,c}
Mercury	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	ug/L	32.0	31.9	35.6	18.1	75.5
Selenium	ug/L	0.4 J	0.3 J	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.026	0.014 J	0.045	0.030	0.028
Sodium	ug/L	23400	24000	24000	25500	24400
Thallium	ug/L	0.096	0.101	0.090	0.180	0.990
Vanadium	ug/L	3.79	4.21	2.01	5.51 ^a	7.64 ^a
Zinc	ug/L	26.8	28.8	44.4	34.3	121

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.039 U	0.040 U	0.040 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U				
Aroclor-1254 (PCB-1254)	ug/L	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.020 U				

Volatile Organic Compounds

Acetone	ug/L	20 U	20 U	20 U	20 U	20 U
Benzene	ug/L	0.070 J	0.070 J	0.50 U	0.10 J	0.15 J
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 1

MW-101
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12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 101 VAS-56393-111010-DD-007	MW 101 VAS-56393-111010-DD-008	MW 101 VAS-56393-111010-DD-006	MW 101 VAS-56393-110910-DD-002	MW 101 VAS-56393-110910-DD-001
Sample Identification:		11/10/2010	11/10/2010	11/10/2010	11/9/2010	11/9/2010
Sample Date:		(54-59) ft BGS	(54-58) ft BGS	(59-64) ft BGS	(64-69) ft BGS	(69-74) ft BGS
Sample Depth:	Units	(55.4-59) ft BGS	(55.4-58) ft BGS	(60.4-64) ft BGS	(65.4-69) ft BGS	(70.4-74) ft BGS
Screen Depth:						
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U				
N-Butylbenzene	ug/L	2.0 U				
Carbon disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.11 J
Carbon tetrachloride	ug/L	0.50 U				
Chlorobenzene	ug/L	0.50 U				
Chlorobromomethane	ug/L	0.50 U				
Chloroethane	ug/L	0.50 U				
Chloroform (Trichloromethane)	ug/L	0.50 U				
Chloromethane (Methyl chloride)	ug/L	0.50 U				
2-Chlorotoluene	ug/L	2.0 U				
4-Chlorotoluene	ug/L	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U				
Dibromochloromethane	ug/L	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U				
Dibromomethane	ug/L	0.50 U				
1,2-Dichlorobenzene	ug/L	0.50 U				
1,3-Dichlorobenzene	ug/L	0.50 U				
1,4-Dichlorobenzene	ug/L	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U				
1,1-Dichlorethane	ug/L	0.50 U				
1,2-Dichlorethane	ug/L	0.50 U				
1,1-Dichloroethene	ug/L	0.50 U				
cis-1,2-Dichloroethene	ug/L	0.50 U				
trans-1,2-Dichloroethene	ug/L	0.50 U				
1,3-Dichloropropane	ug/L	0.50 U				
1,2-Dichloropropane	ug/L	0.50 U				
2,2-Dichloropropane	ug/L	0.50 U				
1,1-Dichloropropene	ug/L	0.50 U				
cis-1,3-Dichloropropene	ug/L	0.50 U				
trans-1,3-Dichloropropene	ug/L	0.50 U				
Ethylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.080 J	0.090 J
Hexachlorobutadiene	ug/L	2.0 U				
2-Hexanone	ug/L	20 U				
Isopropyl benzene	ug/L	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U				
Methylene chloride	ug/L	2.0 U				
Naphthalene	ug/L	2.0 U	2.0 U	0.16 J	0.18 J	0.26 J
N-Propylbenzene	ug/L	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U				
Styrene	ug/L	0.50 U				
tert-Butylbenzene	ug/L	2.0 U				

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12th STREET LANDFILL
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Sample Location:	Ground	MW 101 VAS-56393-111010-DD-007	MW 101 VAS-56393-111010-DD-008	MW 101 VAS-56393-111010-DD-006	MW 101 VAS-56393-110910-DD-002	MW 101 VAS-56393-110910-DD-001
Sample Identification:		11/10/2010	11/10/2010	11/10/2010	11/9/2010	11/9/2010
Sample Date:		(54-59) ft BGS	(54-58) ft BGS	(59-64) ft BGS	(64-69) ft BGS	(69-74) ft BGS
Sample Depth:	Units	(55.4-59) ft BGS	(55.4-58) ft BGS	(60.4-64) ft BGS	(65.4-69) ft BGS	(70.4-74) ft BGS
Screen Depth:						
1,1,2,2-Tetrachloroethane	ug/L	0.50 U				
1,1,1,2-Tetrachloroethane	ug/L	0.50 U				
Tetrachloroethene	ug/L	0.50 U				
Toluene	ug/L	0.16 J	0.18 J	0.12 J	0.33 J	0.40 J
1,2,4-Trichlorobenzene	ug/L	2.0 U				
1,2,3-Trichlorobenzene	ug/L	2.0 U				
1,1,1-Trichloroethane	ug/L	0.50 U				
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	0.080 J
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U				
m&p-Xylenes	ug/L	0.50 U	0.50 U	0.50 U	0.11 J	0.15 J
Field Parameters						
Conductivity, field	mS/cm	0.678	0.678	0.677	0.691	0.690
Dissolved oxygen (DO), field	mg/L	1.97	1.97	1.99	1.19	0.59
Oxidation reduction potential (ORP), field	millivolts	-169	-169	-182	-236	-357
pH, field	s.u.	7.16	7.16	7.10	7.27	7.21
Temperature, field	Deg C	15.06	15.06	12.75	17.88	14.76
Turbidity (field)	NTU	1000 U	1000 U	417	1000 U	1000 U
Pump Intake	ft bgs	58	57	63	68	73
Pumping Rate	mg/min	180	180	180	100	150

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^{a)}</i>			<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>VAS-56393-112210-DD-107</i>	<i>VAS-56393-112210-DD-105</i>	<i>VAS-56393-112210-DD-106</i>
<i>Sample Identification:</i>					<i>11/22/2010</i>	<i>11/22/2010</i>	<i>11/22/2010</i>
<i>Sample Date:</i>					<i>(5-10) ft BGS</i>	<i>(10-15) ft BGS</i>	<i>(15-20) ft BGS</i>
<i>Sample Depth:</i>					<i>(6.4-10) ft BGS</i>	<i>(11.4-15) ft BGS</i>	<i>(16.4-20) ft BGS</i>
<i>Screen Depth:</i>							<i>(21.4-25) ft BGS</i>
Metals							
Aluminum	ug/L	50	50		2190^{ab}	320^{ab}	778^{ab}
Antimony	ug/L	6	6	130	0.148 N	0.131 N	0.132 N
Arsenic	ug/L	10	10	150	2.8 N	1.3 N	1.6 N
Barium	ug/L	2000	2000	1400	141	68.5	73.4
Beryllium	ug/L	4	4	41	0.172	0.016 J	0.040
Cadmium	ug/L	5	5	5.1	0.084	0.017 J	0.034
Chromium	ug/L	100	100	11	14.7^c	3.66	5.28
Cobalt	ug/L	40	100	100	8.030	2.810	4.050
Copper	ug/L	1000	1000	23	8.80	1.86	3.31
Iron	ug/L	300	300		12300^{ab}	2170^{ab}	5440^{ab}
Lead	ug/L	4	4	34	7300^{ab}	1.060	2.620
Magnesium	ug/L	400000	1100000		49800	28900	31400
Manganese	ug/L	50	50	5200	2990^{ab}	1430^{ab}	1210^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	19.4	8.14	8.22
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.010 J	0.020 U	0.020 U
Sodium	ug/L	120000	350000		23200	19700	20000
Thallium	ug/L	2	2	3.7	0.161	0.107	0.064
Vanadium	ug/L	4.5	62	12	5.56^a	0.92	2.36
Zinc	ug/L	2400	5000	310	38.4	11.3	15.6
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.040	0.0064 J	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.0086 J	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	5.6 J	20 U	20 U
Benzene	ug/L	5	5	200	0.17 J	0.19 J	0.33 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location: Sample Identification: Sample Date: Sample Depth: Screen Depth:	<u>Groundwater Cleanup Criteria^{a)}</u>				MW 102 VAS-56393-112210-DD-107 11/22/2010 (5-10) ft BGS (6.4-10) ft BGS	MW 102 VAS-56393-112210-DD-105 11/22/2010 (10-15) ft BGS (11.4-15) ft BGS	MW 102 VAS-56393-112210-DD-106 11/22/2010 (15-20) ft BGS (16.4-20) ft BGS	MW 102 VAS-56393-112210-DD-104 11/22/2010 (20-25) ft BGS (21.4-25) ft BGS				
	Units	a	b	c								
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U				
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Carbon disulfide	ug/L	800	2300	ID	0.10 J	0.50 U	0.50 U	0.50 U				
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U				
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.080 J	0.10 J	0.18 J				
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.50 U	0.50 U				
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U				
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U				
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U				
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U				
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Ethylbenzene	ug/L	74	74	18	0.060 J	0.11 J	0.10 J	0.50 U				
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U				
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U				
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	2.0 U	2.0 U	20 U	20 U				
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U				
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U				
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U				
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U				

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>			<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>VAS-56393-112210-DD-107</i>	<i>VAS-56393-112210-DD-105</i>	<i>VAS-56393-112210-DD-106</i>
<i>Sample Identification:</i>					<i>11/22/2010</i>	<i>11/22/2010</i>	<i>11/22/2010</i>
<i>Sample Date:</i>					<i>(5-10) ft BGS</i>	<i>(10-15) ft BGS</i>	<i>(15-20) ft BGS</i>
<i>Sample Depth:</i>					<i>(6.4-10) ft BGS</i>	<i>(11.4-15) ft BGS</i>	<i>(20-25) ft BGS</i>
<i>Screen Depth:</i>						<i>(16.4-20) ft BGS</i>	<i>(21.4-25) ft BGS</i>
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.29 J	0.39 J	0.60
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.10 J	0.10 J	0.12 J
<i>Field Parameters</i>							
Conductivity, field	mS/cm				0.832	0.674	0.635
Dissolved oxygen (DO), field	mg/L				5.52	0.26	2.71
Oxidation reduction potential (ORP), field	millivolts				37	-128	-89
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.60	7.72	7.71
Temperature, field	Deg C				14.51	14.22	15.11
Turbidity (field)	NTU				1000 U	101	433
Pump Intake	ft bgs				9	14	19
Pumping Rate	mg/min				20	60	50

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>	<i>MW 102</i>
<i>Sample Identification:</i>	VAS-56393-112210-DD-103	VAS-56393-112210-DD-102	VAS-56393-112210-DD-101	VAS-56393-112210-DD-098	VAS-56393-112210-DD-099	
<i>Sample Date:</i>	11/22/2010	11/22/2010	11/22/2010	11/22/2010	11/22/2010	
<i>Sample Depth:</i>	(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS	(40-45) ft BGS	
<i>Screen Depth:</i>	(26.4-30) ft BGS	(31.4-35) ft BGS	(36.4-40) ft BGS	(41.4-45) ft BGS	(41.4-45) ft BGS	
Metals						
Aluminum	ug/L	205 ^{ab}	138 ^{ab}	6820 ^{ab}	5350 ^{ab}	6240 ^{ab}
Antimony	ug/L	0.107 N	0.137 N	0.200 N	0.240 N	0.236 N
Arsenic	ug/L	0.6 N	1.7 N	4.7 N	5.7 N	6.0 N
Barium	ug/L	64.4	68.7	246	282	301
Beryllium	ug/L	0.020 U	0.020 U	0.612	0.525	0.611
Cadmium	ug/L	0.018 J	0.010 J	0.355	0.349	0.393
Chromium	ug/L	3.05	2.84	94.5 ^c	153 ^{abc}	165 ^{bc}
Cobalt	ug/L	1.260	2.250	15.7	17.1	18.3
Copper	ug/L	1.12	1.86	42.6 ^c	65.7 ^c	70.1 ^c
Iron	ug/L	1160 ^{ab}	1840 ^{ab}	54000 ^{ab}	92100 ^{ab}	95400 ^{ab}
Lead	ug/L	0.699	0.717	24.5 ^{ab}	34.5 ^{abc}	38.2 ^{bc}
Magnesium	ug/L	23700	24200	89300	83400	89100
Manganese	ug/L	149 ^{ab}	372 ^{ab}	2460 ^{ab}	3270 ^{ab}	3500 ^{ab}
Mercury	ug/L	0.20 U	0.20 U	0.06 J ^c	0.04 J ^c	0.04 J ^c
Nickel	ug/L	4.09	6.38	40.2	52.7	55.9
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.020 U	0.004 J	0.049	0.068	0.078
Sodium	ug/L	19800	20300	21100	23400	23100
Thallium	ug/L	0.028	0.030	0.287	0.380	0.408
Vanadium	ug/L	0.53	0.49	13.9 ^{ac}	10.8 ^a	11.8 ^a
Zinc	ug/L	6.3	25.7	182	306	318 ^c
PCBs						
Aroclor-1016 (PCB-1016)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.040 U	0.039 U	0.039 U	0.039 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.020 U	0.020 U	0.0067 J	0.0088 J	0.014 J
Aroclor-1254 (PCB-1254)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.020 U	0.020 U	0.020 U	0.0051 J	0.0073 J
Volatile Organic Compounds						
Acetone	ug/L	20 U	20 U	20 U	20 U	20 U
Benzene	ug/L	0.090 J	0.080 J	0.31 J	0.22 J	0.24 J
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 102</i> VAS-56393-112210-DD-103	<i>MW 102</i> VAS-56393-112210-DD-102	<i>MW 102</i> VAS-56393-112210-DD-101	<i>MW 102</i> VAS-56393-112210-DD-098	<i>MW 102</i> VAS-56393-112210-DD-099
<i>Sample Identification:</i>						
<i>Sample Date:</i>		11/22/2010	11/22/2010	11/22/2010	11/22/2010	11/22/2010
<i>Sample Depth:</i>		(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS	(40-45) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(26.4-30) ft BGS	(31.4-35) ft BGS	(36.4-40) ft BGS	(41.4-45) ft BGS	(41.4-45) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U				
N-Butylbenzene	ug/L	2.0 U				
Carbon disulfide	ug/L	0.50 U	0.50 U	0.18 J	0.23 J	0.25 J
Carbon tetrachloride	ug/L	0.50 U				
Chlorobenzene	ug/L	0.50 U				
Chlorobromomethane	ug/L	0.50 U				
Chloroethane	ug/L	0.50 U				
Chloroform (Trichloromethane)	ug/L	0.17 J	0.12 J	0.14 J	0.090 J	0.50 U
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.080 J
2-Chlorotoluene	ug/L	2.0 U				
4-Chlorotoluene	ug/L	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U				
Dibromochloromethane	ug/L	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U				
Dibromomethane	ug/L	0.50 U				
1,2-Dichlorobenzene	ug/L	0.50 U				
1,3-Dichlorobenzene	ug/L	0.50 U				
1,4-Dichlorobenzene	ug/L	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U				
1,1-Dichloroethane	ug/L	0.50 U				
1,2-Dichloroethane	ug/L	0.50 U				
1,1-Dichloroethene	ug/L	0.50 U				
cis-1,2-Dichloroethene	ug/L	0.50 U				
trans-1,2-Dichloroethene	ug/L	0.50 U				
1,3-Dichloropropane	ug/L	0.50 U				
1,2-Dichloropropane	ug/L	0.50 U				
2,2-Dichloropropane	ug/L	0.50 U				
1,1-Dichloropropene	ug/L	0.50 U				
cis-1,3-Dichloropropene	ug/L	0.50 U				
trans-1,3-Dichloropropene	ug/L	0.50 U				
Ethylbenzene	ug/L	0.50 U	0.50 U	0.21 J	0.23 J	0.22 J
Hexachlorobutadiene	ug/L	2.0 U				
2-Hexanone	ug/L	20 U				
Isopropyl benzene	ug/L	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U				
Methylene chloride	ug/L	2.0 U				
Naphthalene	ug/L	2.0 U				
N-Propylbenzene	ug/L	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U				
Styrene	ug/L	0.50 U				
tert-Butylbenzene	ug/L	2.0 U				

TABLE 2

MW-102
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 102</i>				
<i>Sample Identification:</i>		VAS-56393-112210-DD-103	VAS-56393-112210-DD-102	VAS-56393-112210-DD-101	VAS-56393-112210-DD-098	VAS-56393-112210-DD-099
<i>Sample Date:</i>		11/22/2010	11/22/2010	11/22/2010	11/22/2010	11/22/2010
<i>Sample Depth:</i>		(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS	(40-45) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(26.4-30) ft BGS	(31.4-35) ft BGS	(36.4-40) ft BGS	(41.4-45) ft BGS	(41.4-45) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U				
1,1,1,2-Tetrachloroethane	ug/L	0.50 U				
Tetrachloroethene	ug/L	0.50 U				
Toluene	ug/L	0.18 J	0.18 J	0.72	0.66	0.70
1,2,4-Trichlorobenzene	ug/L	2.0 U				
1,2,3-Trichlorobenzene	ug/L	2.0 U				
1,1,1-Trichloroethane	ug/L	0.50 U				
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	0.11 J	0.12 J	0.14 J
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U	0.50 U	0.10 J	0.090 J	0.11 J
m&p-Xylenes	ug/L	0.50 U	0.50 U	0.28 J	0.23 J	0.26 J
<i>Field Parameters</i>						
Conductivity, field	mS/cm	0.604	0.623	0.598	0.662	0.662
Dissolved oxygen (DO), field	mg/L	0.47	0.23	0.43	0.09	0.09
Oxidation reduction potential (ORP), field	millivolts	-121	-112	-157	-147	-147
pH, field	s.u.	7.55	7.67	7.56	7.85	7.85
Temperature, field	Deg C	15.2	14.45	15.15	14.62	14.62
Turbidity (field)	NTU	17.9	1000 U	1000 U	1000 U	1000 U
Pump Intake	ft bgs	29	34	39	44	44
Pumping Rate	mg/min	200	200	250	200	200

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^{a)}</i>			<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>
	<i>Sample Identification:</i>	<i>Sample Date:</i>	<i>Sample Depth:</i>	VAS-56393-111910-DD-095 11/19/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111910-DD-093 11/19/2010 (14-19) ft BGS (15.4-19) ft BGS	VAS-56393-111910-DD-091 11/19/2010 (19-24) ft BGS (20.4-24) ft BGS	VAS-56393-111910-DD-089 11/19/2010 (24-29) ft BGS (25.4-29) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>			
Metals							
Aluminum	ug/L	50	50	1710 ^{ab}	78.7 ^{ab}	289 ^{ab}	3770 ^{ab}
Antimony	ug/L	6	6	0.122 N	0.079 N	0.068 N	0.156 N
Arsenic	ug/L	10	10	4.1 N	0.4 J,N	0.8 N	3.4 N
Barium	ug/L	2000	2000	1400	167	91.3	139
Beryllium	ug/L	4	4	41	0.140	0.020 U	0.010 J
Cadmium	ug/L	5	5	5.1	0.104	0.013 J	0.021
Chromium	ug/L	100	100	11	11.4 ^c	1.12	3.38
Cobalt	ug/L	40	100	100	4.440	1.520	2.280
Copper	ug/L	1000	1000	23	12.4	0.81	2.51
Iron	ug/L	300	300	34	14600 ^{ab}	655 ^{ab}	2160 ^{ab}
Lead	ug/L	4	4	34	6.780 ^{ab}	0.327	1.170
Magnesium	ug/L	400000	1100000		38700	27100	24900
Manganese	ug/L	50	50	5200	893 ^{ab}	403 ^{ab}	190 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	10.8	4.29	4.68
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.009 J	0.006 J	0.004 J
Sodium	ug/L	120000	350000		20100	20900	21400
Thallium	ug/L	2	2	3.7	0.083	0.030	0.029
Vanadium	ug/L	4.5	62	12	5.35 ^a	0.37	0.96
Zinc	ug/L	2400	5000	310	42.8	2.5	13.0
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.0060 J	0.0026 JP	0.0025 JP
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.070 J	0.11 J	0.070 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location: Sample Identification: Sample Date: Sample Depth: Screen Depth:	<u>Groundwater Cleanup Criteria^{a)}</u>				MW 103 VAS-56393-111910-DD-095	MW 103 VAS-56393-111910-DD-093	MW 103 VAS-56393-111910-DD-091	MW 103 VAS-56393-111910-DD-089				
	Units	a	b	c								
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U				
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U				
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U				
Chloroform (Trichloromethane)	ug/L	80	80	170	0.13 J	0.080 J	0.080 J	0.50 U				
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.50 U	0.50 U				
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U				
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U				
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U				
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U				
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Ethylbenzene	ug/L	74	74	18	0.050 J	0.060 J	0.50 U	0.050 J				
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U				
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U				
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	2.0 U	2.0 U	20 U	20 U				
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U				
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U				
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U				
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U				

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^(a)</i>			<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>(10.4-14) ft BGS</i>	<i>(14-19) ft BGS</i>	<i>(20.4-24) ft BGS</i>
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.18 J	0.24 J	0.15 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.50 U	0.10 J	0.50 U
<i>Field Parameters</i>							
Conductivity, field	mS/cm			0.601	0.623	0.631	0.628
Dissolved oxygen (DO), field	mg/L			0.47	0.74	1.12	0.89
Oxidation reduction potential (ORP), field	millivolts			-80	-102	-120	-116
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.37	7.49	7.47
Temperature, field	Deg C				11.71	11.25	10.52
Turbidity (field)	NTU				1000 U	6.14	108
Pump Intake	ft bgs				13	18	23
Pumping Rate	mg/min				220	300	300

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 103	MW 103	MW 103	MW 103
Sample Identification:		VAS-56393-111910-DD-087	VAS-56393-111810-DD-084	VAS-56393-111810-DD-081	VAS-56393-111810-DD-079
Sample Date:		11/19/2010	11/18/2010	11/18/2010	11/18/2010
Sample Depth:		(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	(44-49) ft BGS
Screen Depth:	Units	(34-0-33.0) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	(45.4-49) ft BGS
Metals					
Aluminum	ug/L	6030 ^{ab}	4560 ^{ab}	4440 ^{ab}	3080 ^{ab}
Antimony	ug/L	0.162 N	0.168 N	0.194 N	0.193 N
Arsenic	ug/L	3.3 N	3.2	3.5	2.9
Barium	ug/L	195	168	154	149
Beryllium	ug/L	0.514	0.321	0.332	0.272
Cadmium	ug/L	0.302	0.240	0.226	0.193
Chromium	ug/L	71.4 ^c	88.9 ^c	81.5 ^c	117 ^{abc}
Cobalt	ug/L	11.4	8.890	9.120	9.340
Copper	ug/L	37.0 ^c	36.3 ^c	34.3 ^c	42.6 ^c
Iron	ug/L	46100 ^{ab}	29300 ^{ab}	28500 ^{ab}	24800 ^{ab}
Lead	ug/L	29.1 ^{ab}	16.7 ^{ab}	14.5 ^{ab}	8.850 ^{ab}
Magnesium	ug/L	75300	75600	76100	82500
Manganese	ug/L	1150 ^{ab}	947 ^{ab}	898 ^{ab}	997 ^{ab}
Mercury	ug/L	0.04 J ^c	0.04 J ^c	0.02 J ^c	0.03 J ^c
Nickel	ug/L	31.1	30.1	31.3	33.1
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.046	0.027	0.029	0.031
Sodium	ug/L	23600	22700	23100	24400
Thallium	ug/L	0.177	0.147	0.133	0.129
Vanadium	ug/L	11.2 ^a	9.82 ^a	9.10 ^a	5.33 ^a
Zinc	ug/L	152	185	234	187
PCBs					
Aroclor-1016 (PCB-1016)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.040 U	0.039 U	0.039 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.020	0.014 J	0.012 J	0.012 J
Aroclor-1254 (PCB-1254)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds					
Acetone	ug/L	20 U	20 U	20 U	20 U
Benzene	ug/L	0.060 J	0.070 J	0.080 J	0.10 J
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>
<i>Sample Identification:</i>		VAS-56393-111910-DD-087	VAS-56393-111810-DD-084	VAS-56393-111810-DD-081	VAS-56393-111810-DD-079
<i>Sample Date:</i>		11/19/2010	11/18/2010	11/18/2010	11/18/2010
<i>Sample Depth:</i>		(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	(44-49) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(34-0-33.0) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	(45.4-49) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	0.50 U	0.080 J	0.050 J	0.11 J
Hexachlorobutadiene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U

TABLE 3

MW-103
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>	<i>MW 103</i>
<i>Sample Identification:</i>		VAS-56393-111910-DD-087	VAS-56393-111810-DD-084	VAS-56393-111810-DD-081	VAS-56393-111810-DD-079
<i>Sample Date:</i>		11/19/2010	11/18/2010	11/18/2010	11/18/2010
<i>Sample Depth:</i>		(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	(44-49) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(34-0-33.0) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	(45.4-49) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.16 J	0.20 J	0.20 J	0.28 J
1,2,4-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L	0.50 U	0.50 U	0.50 U	0.10 J
<i>Field Parameters</i>					
Conductivity, field	mS/cm	0.628	0.633	0.643	0.664
Dissolved oxygen (DO), field	mg/L	0.53	0.56	0.35	0.35
Oxidation reduction potential (ORP), field	millivolts	-133	-144	-157	-177
pH, field	s.u.	7.33	7.52	7.56	7.61
Temperature, field	Deg C	9.1	10.54	10.19	10.23
Turbidity (field)	NTU	1000 U	1000 U	1000 U	1000 U
Pump Intake	ft bgs	33	38	43	48
Pumping Rate	mg/min	200	200	200	200

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)
[REDACTED] Highest concentration observed for associated analyte

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^{a)}</i>			<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>VAS-56393-111610-DD-053</i>	<i>VAS-56393-111610-DD-051</i>	<i>VAS-56393-111610-DD-049</i>	<i>VAS-56393-111610-DD-047</i>
<i>Sample Identification:</i>					<i>11/16/2010</i>	<i>11/16/2010</i>	<i>11/16/2010</i>	<i>11/16/2010</i>
<i>Sample Date:</i>					(5-10) ft BGS	(10-15) ft BGS	(15-20) ft BGS	(20-25) ft BGS
<i>Sample Depth:</i>					<i>(6.4-10) ft BGS</i>	<i>(11.4-15) ft BGS</i>	<i>(16.4-20) ft BGS</i>	<i>(21.4-25) ft BGS</i>
<i>Screen Depth:</i>								
Metals								
Aluminum	ug/L	50	50		216^{ab}	33.9	666^{ab}	4080^{ab}
Antimony	ug/L	6	6	130	0.195	0.060 N	0.095 N	0.163 N
Arsenic	ug/L	10	10	150	1.3 J	0.4 J,N	1.7 J,N	5.4 N
Barium	ug/L	2000	2000	1400	179	130	116	164
Beryllium	ug/L	4	4	41	0.020 U	0.020 U	0.037	0.373
Cadmium	ug/L	5	5	5.1	0.012 J	0.016 J	0.032	0.276
Chromium	ug/L	100	100	11	1.35	0.91	3.71	27.7 ^c
Cobalt	ug/L	40	100	100	2.190	1.620	3.700	11.6
Copper	ug/L	1000	1000	23	0.84	1.47	3.00	25.7 ^c
Iron	ug/L	300	300		1240^{ab}	288	3590^{ab}	32300^{ab}
Lead	ug/L	4	4	34	0.837	0.147	1.800	22.5^{ab}
Magnesium	ug/L	400000	1100000		43000	26200	31500	55700
Manganese	ug/L	50	50	5200	1680^{ab}	762^{ab}	903^{ab}	1090^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U	0.05 J^c
Nickel	ug/L	100	100	130	5.68	5.32	9.63	24.9
Selenium	ug/L	50	50	5	1.0 U	1.0 U	0.4 J,N	1.0 U
Silver	ug/L	34	98	0.2	0.020 U	0.006 J	0.004 J	0.025
Sodium	ug/L	120000	350000		26600	21500	22400	24000
Thallium	ug/L	2	2	3.7	0.008 J	0.015 J	0.042	0.164
Vanadium	ug/L	4.5	62	12	0.69	0.28	1.99	11.4^a
Zinc	ug/L	2400	5000	310	4.4	2.9	9.3	134
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.025 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.050 U	0.040 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.025 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.025 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.011 J	0.020 U	0.020 U	0.0059 JP
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.025 U	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.025 U	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds								
Acetone	ug/L	730	2100	1700	5.1 J	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.65	0.21 J	0.14 J	0.090 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^(a)</i>				<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111610-DD-053	11/16/2010 (5-10) ft BGS (6.4-10) ft BGS	11/16/2010 (10-15) ft BGS (11.4-15) ft BGS	11/16/2010 (15-20) ft BGS (16.4-20) ft BGS	11/16/2010 (20-25) ft BGS (21.4-25) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200		20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	80	230	ID		2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	800	2300	ID		0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	5	5	45		0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47		0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID		0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170		0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID		0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	150	420	ID		2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L					2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L					2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2			2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID		0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2		2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230			0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16		0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38		0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13		0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID		0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740		0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360		0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65		0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620		0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500		0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290		0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L					0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.14 J		0.080 J	0.060 J	0.050 J
Hexachlorobutadiene	ug/L	15	42	0.05		2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900			20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID		2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID		2.0 U	2.0 U	20 U	20 U
Methylene chloride	ug/L	5	5	940		2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13		2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	80	230	ID		2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID		2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80		0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230			2.0 U	2.0 U	2.0 U	2.0 U

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>			<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111610-DD-053	VAS-56393-111610-DD-051	VAS-56393-111610-DD-049	VAS-56393-111610-DD-047
Sample Identification:					11/16/2010	11/16/2010	11/16/2010	11/16/2010
Sample Date:					(5-10) ft BGS	(10-15) ft BGS	(15-20) ft BGS	(20-25) ft BGS
Sample Depth:					(6.4-10) ft BGS	(11.4-15) ft BGS	(16.4-20) ft BGS	(21.4-25) ft BGS
Screen Depth:								
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.96	0.45 J	0.43 J	0.25 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.11 J	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.20 J	0.13 J	0.12 J	0.50 U

Field Parameters

Conductivity, field	mS/cm		0.749	0.625	0.636	0.676
Dissolved oxygen (DO), field	mg/L		5.35	1.87	0.41	0.68
Oxidation reduction potential (ORP), field	millivolts		17	-84	-171	-79
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.66	7.68
Temperature, field	Deg C			9.43	10.9	10.38
Turbidity (field)	NTU			1000 U	4.81	15
Pump Intake	ft bgs			9	14	19
Pumping Rate	mg/min			100	150	100

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 104	MW 104	MW 104	MW 104
Sample Identification:	VAS-56393-111610-DD-046	VAS-56393-111510-DD-042	VAS-56393-111510-DD-040	VAS-56393-111510-DD-036	
Sample Date:	11/16/2010	11/15/2010	11/15/2010	11/15/2010	
Sample Depth:	(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS	
Screen Depth:	(26.4-30) ft BGS	(31.4-35) ft BGS	(36.4-40) ft BGS	(41.4-45) ft BGS	
Units					

Metals

Aluminum	ug/L	1740 ^{a,b}	3010 ^{a,b}	4180 ^{a,b}	3090 ^{a,b}
Antimony	ug/L	0.235 N	0.167	0.156	0.184
Arsenic	ug/L	3.4 N	3.9	3.8	3.5
Barium	ug/L	116	130	156	142
Beryllium	ug/L	0.155	0.237	0.289	0.202
Cadmium	ug/L	0.132	0.161	0.171	0.139
Chromium	ug/L	25.7 ^c	31.4 ^c	71.0 ^c	73.4 ^c
Cobalt	ug/L	4.900	8.040	6.620	5.670
Copper	ug/L	18.8	20.3	26.3 ^c	28.2 ^c
Iron	ug/L	15200 ^{a,b}	22400 ^{a,b}	29300 ^{a,b}	26000 ^{a,b}
Lead	ug/L	15.4 ^{a,b}	13.0 ^{a,b}	12.3 ^{a,b}	8.920 ^{a,b}
Magnesium	ug/L	43400	56500	53400	43900
Manganese	ug/L	532 ^{a,b}	733 ^{a,b}	783 ^{a,b}	798 ^{a,b}
Mercury	ug/L	0.02 J ^c	0.20 U	0.02 J ^c	0.02 J ^c
Nickel	ug/L	17.5	19.5	25.4	25.1
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.016 J	0.023	0.040	0.035
Sodium	ug/L	21300	21600	25300	24600
Thallium	ug/L	0.092	0.150	0.140	0.098
Vanadium	ug/L	5.67 ^a	9.10 ^a	8.68 ^a	6.62 ^a
Zinc	ug/L	81.8	137	130	239

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.039 U	0.039 U	0.039 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.011 J	0.020 U	0.018 J	0.029
Aroclor-1254 (PCB-1254)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U

Volatile Organic Compounds

Acetone	ug/L	20 U	20 U	20 U	20 U
Benzene	ug/L	0.070 J	0.12 J	0.12 J	0.20 J
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 104</i> VAS-56393-111610-DD-046	<i>MW 104</i> VAS-56393-111510-DD-042	<i>MW 104</i> VAS-56393-111510-DD-040	<i>MW 104</i> VAS-56393-111510-DD-036
<i>Sample Identification:</i>		<i>11/16/2010</i>	<i>11/15/2010</i>	<i>11/15/2010</i>	<i>11/15/2010</i>
<i>Sample Date:</i>					
<i>Sample Depth:</i>		(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	<i>(26.4-30) ft BGS</i>	<i>(31.4-35) ft BGS</i>	<i>(36.4-40) ft BGS</i>	<i>(41.4-45) ft BGS</i>
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	0.50 U	0.50 U	0.26 J	0.18 J
Carbon tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	0.50 U	0.090 J	0.050 J	0.080 J
Hexachlorobutadiene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U

TABLE 4

MW-104
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>	<i>MW 104</i>
<i>Sample Identification:</i>	VAS-56393-111610-DD-046	VAS-56393-111510-DD-042	VAS-56393-111510-DD-040	VAS-56393-111510-DD-036	
<i>Sample Date:</i>	11/16/2010	11/15/2010	11/15/2010	11/15/2010	
<i>Sample Depth:</i>	(25-30) ft BGS	(30-35) ft BGS	(35-40) ft BGS	(40-45) ft BGS	
<i>Screen Depth:</i>	Units (26.4-30) ft BGS	Units (31.4-35) ft BGS	Units (36.4-40) ft BGS	Units (41.4-45) ft BGS	
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.19 J	0.49 J	0.41 J	0.69
1,2,4-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L	0.50 U	0.13 J	0.50 U	0.50 U
<i>Field Parameters</i>					
Conductivity, field	mS/cm	0.693	0.714	0.698	0.706
Dissolved oxygen (DO), field	mg/L	1.32	0.95	0.62	0.8
Oxidation reduction potential (ORP), field	millivolts	-33	-99	-127	-122
pH, field	s.u.	7.46	7.37	7.39	7.38
Temperature, field	Deg C	10.35	12.28	12.27	12.52
Turbidity (field)	NTU	1000 U	1000 U	1000 U	1000 U
Pump Intake	ft bgs	29	34	39	44
Pumping Rate	mg/min	200	300	300	300

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)
[REDACTED] Highest concentration observed for associated analyte

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria</i> ⁽¹⁾			<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111610-DD-054	VAS-56393-111610-DD-052	VAS-56393-111610-DD-050	VAS-56393-111610-DD-048	VAS-56393-111610-DD-044
<i>Sample Identification:</i>					11/16/2010	11/16/2010	11/16/2010	11/16/2010	11/16/2010
<i>Sample Date:</i>					(7-12) ft BGS	(12-17) ft BGS	(17-22) ft BGS	(22-27) ft BGS	(27-32) ft BGS
<i>Sample Depth:</i>					(8.4-12) ft BGS	(13.4-17) ft BGS	(18.4-22) ft BGS	(23.4-27) ft BGS	(28.4-32) ft BGS
<i>Screen Depth:</i>									
Metals									
Aluminum	ug/L	50	50		3730 ^{ab}	691 ^{ab}	96.3 ^{ab}	135 ^{ab}	6080 ^{ab}
Antimony	ug/L	6	6	130	0.074	0.145	0.056 N	0.116 N	0.254 N
Arsenic	ug/L	10	10	150	3.0	2.1	0.7 J,N	0.8 J,N	8.3 N
Barium	ug/L	2000	2000	1400	177	148	76.7	82.0	265
Beryllium	ug/L	4	4	41	0.282	0.078	0.020 U	0.020 U	0.489
Cadmium	ug/L	5	5	5.1	0.181	0.035	0.005 J	0.010 J	0.280
Chromium	ug/L	100	100	11	11.5 ^c	11.7 ^c	0.95	2.77	86.0 ^c
Cobalt	ug/L	40	100	100	6.180	3.510	1.060	2.150	11.9
Copper	ug/L	1000	1000	23	12.6	6.28	0.98	1.42	68.3 ^c
Iron	ug/L	300	300		19800 ^{ab}	4800 ^{ab}	799 ^{ab}	1480 ^{ab}	49700 ^{ab}
Lead	ug/L	4	4	34	15.4 ^{ab}	3.890	0.333	0.440	25.8 ^{ab}
Magnesium	ug/L	400000	1100000		42300	41900	24500	28900	73500
Manganese	ug/L	50	50	5200	956 ^{ab}	1170 ^{ab}	184 ^{ab}	521 ^{ab}	1650 ^{ab}
Mercury	ug/L	2	2	0.0013	0.05 J ^c	0.20 U	0.20 U	0.20 U	0.07 J ^c
Nickel	ug/L	100	100	130	14.6	9.12	2.87	5.77	52.2
Selenium	ug/L	50	50	5	1.0 U				
Silver	ug/L	34	98	0.2	0.015 J	0.007 J	0.020 U	0.006 J	0.064
Sodium	ug/L	120000	350000		23600	23500	21400	23000	23000
Thallium	ug/L	2	2	3.7	0.104	0.048	0.011 J	0.024	0.188
Vanadium	ug/L	4.5	62	12	7.19 ^a	2.60	0.39	0.57	12.1 ^c
Zinc	ug/L	2400	5000	310	50.7	17.2	15.1	17.5	1080 ^c
PCBs									
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.040 U	0.040 U	0.040 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.027	0.016 J	0.020 U	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U				
Volatile Organic Compounds									
Acetone	ug/L	730	2100	1700	20 U				
Benzene	ug/L	5	5	200	0.50 U	0.14 J	0.50 U	0.30 J	0.21 J
Bromobenzene	ug/L	18	50		2.0 U				
Bromodichloromethane	ug/L	80	80	ID	0.50 U				
Bromoform	ug/L	80	80	ID	0.50 U				
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U				
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U				
N-Butylbenzene	ug/L	80	230	ID	2.0 U				
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U	0.15 J

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾			MW 105	MW 105	MW 105	MW 105	MW 105	
	Sample Identification:				VAS-56393-111610-DD-054	VAS-56393-111610-DD-052	VAS-56393-111610-DD-050	VAS-56393-111610-DD-048	VAS-56393-111610-DD-044
		11/16/2010	11/16/2010	11/16/2010	11/16/2010	11/16/2010	11/16/2010	11/16/2010	
Sample Depth:	Units	a	b	c	(7-12) ft BGS (8.4-12) ft BGS	(12-17) ft BGS (13.4-17) ft BGS	(17-22) ft BGS (18.4-22) ft BGS	(22-27) ft BGS (23.4-27) ft BGS	(27-32) ft BGS (28.4-32) ft BGS
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.080 J	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.50 U	0.060 J	0.50 U	0.13 J	0.12 J
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	20 U	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U	0.17 J
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.15 J	0.41 J	0.20 J	0.66	0.54
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.18 J	0.50 U	0.10 J	0.12 J	

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location: Sample Identification: Sample Date: Sample Depth: Screen Depth:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾			<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	
	<i>Units</i>	a	b	c	VAS-56393-111610-DD-054 11/16/2010 (7-12) ft BGS (8.4-12) ft BGS	VAS-56393-111610-DD-052 11/16/2010 (12-17) ft BGS (13.4-17) ft BGS	VAS-56393-111610-DD-050 11/16/2010 (17-22) ft BGS (18.4-22) ft BGS	VAS-56393-111610-DD-048 11/16/2010 (22-27) ft BGS (23.4-27) ft BGS	VAS-56393-111610-DD-044 11/16/2010 (27-32) ft BGS (28.4-32) ft BGS
		ug/L	5	5	330	0.50 U	0.50 U	0.50 U	
1,1,2-Trichloroethane					0.50 U	0.50 U	0.50 U	0.50 U	
Trichloroethene					0.50 U	0.50 U	0.50 U	0.50 U	
Trichlorofluoromethane (CFC-11)					0.50 U	0.50 U	0.50 U	0.50 U	
1,2,3-Trichloropropane					0.50 U	0.50 U	0.50 U	0.50 U	
1,2,4-Trimethylbenzene					2.0 U	2.0 U	2.0 U	2.0 U	
1,3,5-Trimethylbenzene					2.0 U	2.0 U	2.0 U	2.0 U	
Vinyl chloride					0.50 U	0.50 U	0.50 U	0.50 U	
o-Xylene					0.50 U	0.50 U	0.50 U	0.50 U	
m&p-Xylenes					0.50 U	0.10 J	0.50 U	0.11 J	
<i>Field Parameters</i>									
Conductivity, field	mS/cm				0.743	0.715	0.648	0.680	
Dissolved oxygen (DO), field	mg/L				0.67	4.95	0.88	0.45	
Oxidation reduction potential (ORP), field	millivolts				-20	-32	-93	-169	
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.17	7.56	7.43	7.60	
Temperature, field	Deg C				11.12	10.95	11.2	10.94	
Turbidity (field)	NTU				1000 U	26.3	28.2	25.9	
Pump Intake	ft bgs				11	16	21	26	
Pumping Rate	mg/min				200	150	200	200	

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 105				
Sample Identification:	VAS-56393-111610-DD-045	VAS-56393-111510-DD-041	VAS-56393-111510-DD-039	VAS-56393-111510-DD-034	VAS-56393-111510-DD-035	VAS-56393-111510-DD-035
Sample Date:	11/16/2010	11/15/2010	11/15/2010	11/15/2010	11/15/2010	11/15/2010
Sample Depth:	(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS	(42-47) ft BGS
Screen Depth:	Units (28.4-32) ft BGS	Units (33.4-37) ft BGS	Units (38.4-42) ft BGS	Units (43.4-47) ft BGS	Units (43.4-47) ft BGS	Units (43.4-47) ft BGS

Metals

Aluminum	ug/L	5940 ^{ab}	488 ^{ab}	3310 ^{ab}	5060 ^{ab}	5020 ^{ab}
Antimony	ug/L	0.262 N	0.169	0.381	0.160	0.147
Arsenic	ug/L	8.5 N	1.8	8.6	7.7	7.2
Barium	ug/L	248	85.1	145	204	202
Beryllium	ug/L	0.480	0.021	0.242	0.430	0.361
Cadmium	ug/L	0.246	0.028	0.128	0.237	0.230
Chromium	ug/L	84.3 ^c	6.87	56.0 ^c	59.2 ^c	57.5 ^c
Cobalt	ug/L	11.3	2.580	5.880	8.440	8.290
Copper	ug/L	64.5 ^c	7.77	71.0 ^c	27.9 ^c	27.5 ^c
Iron	ug/L	49100 ^{ab}	3940 ^{ab}	28800 ^{ab}	37800 ^{ab}	37600 ^{ab}
Lead	ug/L	26.3 ^{ab}	1.470	14.7 ^{ab}	24.5 ^{ab}	23.9 ^{ab}
Magnesium	ug/L	68900	26300	58400	81900	81800
Manganese	ug/L	1530 ^{ab}	413 ^{ab}	711 ^{ab}	1180 ^{ab}	1170 ^{ab}
Mercury	ug/L	0.05 J ^c	0.20 U	0.03 J ^c	0.10 J ^c	0.06 J ^c
Nickel	ug/L	49.2	10.3	45.1	25.3	24.7
Selenium	ug/L	1.0 U	1.0 U	0.6 J	1.0 U	1.0 U
Silver	ug/L	0.056	0.008 J	0.037	0.043	0.040
Sodium	ug/L	22900	20700	21100	22100	21600
Thallium	ug/L	0.185	0.027	0.096	0.127	0.121
Vanadium	ug/L	12.1 ^{ac}	1.32	7.59 ^a	10.4 ^a	10.3 ^a
Zinc	ug/L	987 ^c	232	1800 ^c	78.4	77.0

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.040 U	0.039 U	0.039 U	0.040 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U	0.020 U	0.020 U	0.018 J	0.018 J
Aroclor-1254 (PCB-1254)	ug/L	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.020 U				

Volatile Organic Compounds

Acetone	ug/L	20 U	20 U	20 U	20 U	20 U
Benzene	ug/L	0.23 J	0.13 J	0.080 J	0.16 J	0.15 J
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	0.18 J	0.50 U	0.50 U	0.14 J	0.14 J

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>	<i>MW 105</i>
<i>Sample Identification:</i>	VAS-56393-111610-DD-045	VAS-56393-111510-DD-041	VAS-56393-111510-DD-039	VAS-56393-111510-DD-034	VAS-56393-111510-DD-035	
<i>Sample Date:</i>	11/16/2010	11/15/2010	11/15/2010	11/15/2010	11/15/2010	
<i>Sample Depth:</i>	(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS	
<i>Screen Depth:</i>	Units (28.4-32) ft BGS	Units (33.4-37) ft BGS	Units (38.4-42) ft BGS	Units (43.4-47) ft BGS	Units (43.4-47) ft BGS	
Carbon tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	0.50 U	0.10 J	0.50 U	0.50 U	0.080 J
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	0.13 J	0.060 J	0.50 U	0.090 J	0.090 J
Hexachlorobutadiene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	20 U	20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.59	0.54	0.37 J	0.59	0.58
1,2,4-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	0.12 J	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 5

MW-105
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 105				
Sample Identification:		VAS-56393-111610-DD-045	VAS-56393-111510-DD-041	VAS-56393-111510-DD-039	VAS-56393-111510-DD-034	VAS-56393-111510-DD-035
Sample Date:		11/16/2010	11/15/2010	11/15/2010	11/15/2010	11/15/2010
Sample Depth:		(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS
Screen Depth:	Units	(28.4-32) ft BGS	(33.4-37) ft BGS	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U				
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U				
m&p-Xylenes	ug/L	0.13 J	0.10 J	0.50 U	0.11 J	0.50 U
Field Parameters						
Conductivity, field	mS/cm	0.675	0.646	0.629	0.635	0.635
Dissolved oxygen (DO), field	mg/L	0.57	0.33	0.75	0.61	0.61
Oxidation reduction potential (ORP), field	millivolts	-144	-100	-36	-56	-56
pH, field	s.u.	7.43	7.74	7.53	7.67	7.67
Temperature, field	Deg C	9.76	11.27	10.98	10.95	10.95
Turbidity (field)	NTU	1000 U				
Pump Intake	ft bgs	31	36	41	46	46
Pumping Rate	mg/min	200	180	300	300	300

Notes:

(I) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (I)

[YELLOW] Highest concentration observed for associated analyte

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^(a)</i>			<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>VAS-56393-111510-DD-033</i>	<i>VAS-56393-111210-DD-030</i>	<i>VAS-56393-111210-DD-028</i>	<i>VAS-56393-111210-DD-024</i>
<i>Sample Identification:</i>					<i>11/15/2010</i>	<i>11/12/2010</i>	<i>11/12/2010</i>	<i>11/12/2010</i>
<i>Sample Date:</i>					(4-9) ft BGS	(9-14) ft BGS	(14-19) ft BGS	(19-24) ft BGS
<i>Sample Depth:</i>					<i>(5.4-9) ft BGS</i>	<i>(10.4-14) ft BGS</i>	<i>(15.4-19) ft BGS</i>	<i>(20.4-24) ft BGS</i>
<i>Screen Depth:</i>								
Metals								
Aluminum	ug/L	50	50		1110^{ab}	227^{ab}	118^{ab}	69.2^{ab}
Antimony	ug/L	6	6	130	0.124	0.132	0.069	0.033 J
Arsenic	ug/L	10	10	150	18.3^{ab}	2.8	1.5	0.5
Barium	ug/L	2000	2000	1400	693	224	141	80.8
Beryllium	ug/L	4	4	41	0.102	0.020 U	0.020 U	0.020 U
Cadmium	ug/L	5	5	5.1	0.084	0.026	0.008 J	0.008 J
Chromium	ug/L	100	100	11	6.62	1.98	1.02	0.59
Cobalt	ug/L	40	100	100	2.210	2.470	1.520	0.522
Copper	ug/L	1000	1000	23	6.81	3.09	0.80	1.04
Iron	ug/L	300	300		29000^{ab}	4060^{ab}	1190^{ab}	572^{ab}
Lead	ug/L	4	4	34	4.050^{ab}	0.798	0.422	0.452
Magnesium	ug/L	400000	1100000		38000	29800	26600	24900
Manganese	ug/L	50	50	5200	979^{ab}	1290^{ab}	631^{ab}	72.3^{ab}
Mercury	ug/L	2	2	0.0013	0.04 J^c	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	5.37	6.06	2.25	1.28
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.031	0.011 J	0.020 U	0.020 U
Sodium	ug/L	120000	350000		18000	26000	22200	21900
Thallium	ug/L	2	2	3.7	0.012 J	0.008 J	0.008 J	0.008 J
Vanadium	ug/L	4.5	62	12	3.27	0.88	0.47	0.35
Zinc	ug/L	2400	5000	310	14.2	6.5	2.5	1.5
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.039 U	0.039 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.075	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds								
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U	5.5 J
Benzene	ug/L	5	5	200	0.30 J	0.12 J	0.50 U	0.50 U
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^(a)</i>				<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>			
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111510-DD-033	11/15/2010 (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111210-DD-030	11/12/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111210-DD-028	11/12/2010 (14-19) ft BGS (15.4-19) ft BGS	VAS-56393-111210-DD-024
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200		20 U		20 U		20 U	
N-Butylbenzene	ug/L	80	230	ID		2.0 U		2.0 U		2.0 U	
Carbon disulfide	ug/L	800	2300	ID		0.50 U		0.50 U		0.50 U	
Carbon tetrachloride	ug/L	5	5	45		0.50 U		0.50 U		0.50 U	
Chlorobenzene	ug/L	100	100	47		0.50 U		0.50 U		0.50 U	
Chlorobromomethane	ug/L					0.50 U		0.50 U		0.50 U	
Chloroethane	ug/L	430	1700	ID		0.50 U		0.50 U		0.50 U	
Chloroform (Trichloromethane)	ug/L	80	80	170		0.50 U		0.50 U		0.50 U	
Chloromethane (Methyl chloride)	ug/L	260	1100	ID		0.50 U		0.50 U		0.50 U	
2-Chlorotoluene	ug/L	150	420	ID		2.0 U		2.0 U		2.0 U	
4-Chlorotoluene	ug/L					2.0 U		2.0 U		2.0 U	
Cymene (p-Isopropyltoluene)	ug/L					2.0 U		2.0 U		2.0 U	
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2			2.0 U		2.0 U		2.0 U	
Dibromochloromethane	ug/L	80	80	ID		0.50 U		0.50 U		0.50 U	
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2		2.0 U		2.0 U		2.0 U	
Dibromomethane	ug/L	80	230			0.50 U		0.50 U		0.50 U	
1,2-Dichlorobenzene	ug/L	600	600	16		0.50 U		0.50 U		0.50 U	
1,3-Dichlorobenzene	ug/L	6.6	19	38		0.50 U		0.50 U		0.50 U	
1,4-Dichlorobenzene	ug/L	75	75	13		0.50 U		0.50 U		0.50 U	
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID		0.50 U		0.50 U		0.50 U	
1,1-Dichloroethane	ug/L	880	2500	740		0.50 U		0.50 U		0.50 U	
1,2-Dichloroethane	ug/L	5	5	360		0.50 U		0.50 U		0.50 U	
1,1-Dichloroethene	ug/L	7	7	65		0.50 U		0.50 U		0.50 U	
cis-1,2-Dichloroethene	ug/L	70	70	620		0.50 U		0.50 U		0.50 U	
trans-1,2-Dichloroethene	ug/L	100	100	1500		0.50 U		0.50 U		0.50 U	
1,3-Dichloropropane	ug/L					0.50 U		0.50 U		0.50 U	
1,2-Dichloropropane	ug/L	5	5	290		0.50 U		0.50 U		0.50 U	
2,2-Dichloropropane	ug/L					0.50 U		0.50 U		0.50 U	
1,1-Dichloropropene	ug/L					0.50 U		0.50 U		0.50 U	
cis-1,3-Dichloropropene	ug/L					0.50 U		0.50 U		0.50 U	
trans-1,3-Dichloropropene	ug/L					0.50 U		0.50 U		0.50 U	
Ethylbenzene	ug/L	74	74	18	0.080 J			0.50 U		0.50 U	
Hexachlorobutadiene	ug/L	15	42	0.05		2.0 U		2.0 U		2.0 U	
2-Hexanone	ug/L	1000	2900			20 U		20 U		20 U	
Isopropyl benzene	ug/L	800	2300	ID		2.0 U		2.0 U		2.0 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID		2.0 U		2.0 U		20 U	
Methylene chloride	ug/L	5	5	940		2.0 U		2.0 U		2.0 U	
Naphthalene	ug/L	520	1500	13		2.0 U		2.0 U		2.0 U	
N-Propylbenzene	ug/L	80	230	ID		2.0 U		2.0 U		2.0 U	
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID		2.0 U		2.0 U		2.0 U	
Styrene	ug/L	100	100	80		0.50 U		0.50 U		0.50 U	
tert-Butylbenzene	ug/L	80	230			2.0 U		2.0 U		2.0 U	

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>			<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111510-DD-033 <i>11/15/2010</i> (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111210-DD-030 <i>11/12/2010</i> (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111210-DD-028 <i>11/12/2010</i> (14-19) ft BGS (15.4-19) ft BGS	VAS-56393-111210-DD-024 <i>11/12/2010</i> (19-24) ft BGS (20.4-24) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	2.3	0.18 J	0.07 J	0.50 U
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.1 J	0.19 J	0.16 J
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.10 J	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.23 J	0.50 U	0.50 U	0.50 U

Field Parameters

Conductivity, field	mS/cm		1.205	0.833	0.722	0.688
Dissolved oxygen (DO), field	mg/L		0.43	0.8	1.05	1.69
Oxidation reduction potential (ORP), field	millivolts		-98	-110	-86	-33
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	6.64	6.90
Temperature, field	Deg C			11.87	18.38	13.93
Turbidity (field)	NTU			134	17.8	4.64
Pump Intake	ft bgs			8	13	18
Pumping Rate	mg/min			300	85	300

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>
<i>Sample Identification:</i>	VAS-56393-111210-DD-021	VAS-56393-111210-DD-019	VAS-56393-111110-DD-016	VAS-56393-111110-DD-014	
<i>Sample Date:</i>	11/12/2010	11/12/2010	11/11/2010	11/11/2010	
<i>Sample Depth:</i>	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	
<i>Screen Depth:</i>	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	

Metals

Aluminum	ug/L	268 ^{ab}	179 ^{ab}	1520 ^{ab}	3040 ^{ab}
Antimony	ug/L	0.047 J	0.056	0.144	0.194
Arsenic	ug/L	1.2	1.0	6.2	7.7
Barium	ug/L	82.6	84.2	111	155
Beryllium	ug/L	0.010 J	0.020 U	0.115	0.269
Cadmium	ug/L	0.013 J	0.021	0.06	0.191
Chromium	ug/L	2.14	1.95	17.2 ^c	43.4 ^c
Cobalt	ug/L	0.660	1.300	3.35	5.77
Copper	ug/L	2.08	1.89	13.8	28.4 ^c
Iron	ug/L	1680 ^{ab}	1460 ^{ab}	11900 ^{ab}	27600 ^{ab}
Lead	ug/L	1.250	0.876	10.6 ^{ab}	20.9 ^{ab}
Magnesium	ug/L	26200	25700	32300	42300
Manganese	ug/L	103 ^{ab}	313 ^{ab}	424 ^{ab}	579 ^{ab}
Mercury	ug/L	0.20 U	0.20 U	0.02 J ^c	0.09 J ^c
Nickel	ug/L	2.19	3.59	10.6	22.6
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.020 U	0.020 U	0.017 J	0.041
Sodium	ug/L	21500	21800	24700	40400
Thallium	ug/L	0.016 J	0.040	0.065	0.089
Vanadium	ug/L	1.04	0.69	4.58 ^a	8.03 ^a
Zinc	ug/L	6.0	4.5	30.6	69.4

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.039 U	0.040 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.012 J	0.019 J	0.069	0.35
Aroclor-1260 (PCB-1260)	ug/L	0.020 U	0.020 U	0.020 U	0.020 U

Volatile Organic Compounds

Acetone	ug/L	20 U	20 U	20 U	20 U
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 106</i> VAS-56393-111210-DD-021	<i>MW 106</i> VAS-56393-111210-DD-019	<i>MW 106</i> VAS-56393-111110-DD-016	<i>MW 106</i> VAS-56393-111110-DD-014
<i>Sample Identification:</i>		<i>11/12/2010</i>	<i>11/12/2010</i>	<i>11/11/2010</i>	<i>11/11/2010</i>
<i>Sample Date:</i>					
<i>Sample Depth:</i>		(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	<i>(25.4-29) ft BGS</i>	<i>(30.4-34) ft BGS</i>	<i>(35.4-39) ft BGS</i>	<i>(40.4-44) ft BGS</i>
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Hexachlorobutadiene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U

TABLE 6

MW-106
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>	<i>MW 106</i>
<i>Sample Identification:</i>		VAS-56393-111210-DD-021	VAS-56393-111210-DD-019	VAS-56393-111110-DD-016	VAS-56393-111110-DD-014
<i>Sample Date:</i>		11/12/2010	11/12/2010	11/11/2010	11/11/2010
<i>Sample Depth:</i>		(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	0.06 J	0.65	0.51	0.35 J
1,2,4-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	0.15 J	0.16 J	0.12 J	0.50 U
1,1,2-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L	0.50 U	0.50 U	0.50 U	0.50 U
<i>Field Parameters</i>					
Conductivity, field	mS/cm	0.677	0.688	0.710	0.785
Dissolved oxygen (DO), field	mg/L	1.7	1.71	1.39	1.26
Oxidation reduction potential (ORP), field	millivolts	-43	-64	1	23
pH, field	s.u.	7.12	7.21	7.87	7.79
Temperature, field	Deg C	12.61	11.97	13.19	12.76
Turbidity (field)	NTU	67.9	1000 U	1000 U	1000 U
Pump Intake	ft bgs	28	33	38	43
Pumping Rate	mg/min	250	300	300	300

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^{a)}</i>			<i>MW 107</i>	<i>MW 107</i>	<i>MW 107</i>	<i>MW 107</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111510-DD-032 11/15/2010 (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111210-DD-029 11/12/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111210-DD-025 11/12/2010 (14-19) ft BGS (15.4-19) ft BGS
Metals							
Aluminum	ug/L	50	50		68.3 ^{ab}	2910 ^{ab}	1140 ^{ab}
Antimony	ug/L	6	6	130	0.075	0.209	0.133
Arsenic	ug/L	10	10	150	0.9	3.4	2.6
Barium	ug/L	2000	2000	1400	215	141	111
Beryllium	ug/L	4	4	41	0.020 U	0.285	0.099
Cadmium	ug/L	5	5	5.1	0.047	0.212	0.067
Chromium	ug/L	100	100	11	1.60	41.7 ^c	30.3 ^c
Cobalt	ug/L	40	100	100	4.310	8.360	3.700
Copper	ug/L	1000	1000	23	1.74	27.6 ^c	10.7
Iron	ug/L	300	300		985 ^{ab}	26600 ^{ab}	10800 ^{ab}
Lead	ug/L	4	4	34	0.439	16.9 ^{ab}	5.330 ^{ab}
Magnesium	ug/L	400000	1100000		30000	47000	35600
Manganese	ug/L	50	50	5200	3980 ^{ab}	1810 ^{ab}	721 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.02 J ^c	0.20 U
Nickel	ug/L	100	100	130	10.7	35.7	24.2
Selenium	ug/L	50	50	5	1.0 U	0.3 J	1.0 U
Silver	ug/L	34	98	0.2	0.009 J	0.017 J	0.013 J
Sodium	ug/L	120000	350000		21700	23200	23400
Thallium	ug/L	2	2	3.7	0.055	0.296	0.116
Vanadium	ug/L	4.5	62	12	0.47	9.86 ^a	4.22
Zinc	ug/L	2400	5000	310	6.2	57.9	24.5
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.040 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.33 J	0.50 U	0.50 U
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria^(a)</u>				MW 107 VAS-56393-111510-DD-032	MW 107 VAS-56393-111210-DD-029	MW 107 VAS-56393-111210-DD-025	MW 107 VAS-56393-111210-DD-022				
	Sample Identification:	a	b	c								
Sample Date:					11/15/2010	11/12/2010	11/12/2010	11/12/2010				
Sample Depth:					(4-9) ft BGS (5.4-9) ft BGS	(9-14) ft BGS	(14-19) ft BGS (10.4-14) ft BGS	(19-24) ft BGS (20.4-24) ft BGS				
Screen Depth:	Units	a	b	c								
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U				
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U				
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U				
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U				
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.50 U	0.50 U				
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.50 U	0.50 U				
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U				
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U				
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U				
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U				
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U				
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U				
Ethylbenzene	ug/L	74	74	18	0.080 J	0.50 U	0.50 U	0.50 U				
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U				
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U				
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	2.0 U	2.0 U	20 U	20 U				
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U				
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U				
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U				
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U				
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U				

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>			<i>MW 107</i>	<i>MW 107</i>	<i>MW 107</i>	<i>MW 107</i>	
	<i>Sample Identification:</i>				VAS-56393-111510-DD-032	VAS-56393-111210-DD-029	VAS-56393-111210-DD-025	VAS-56393-111210-DD-022
		<i>Sample Date:</i>	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>(4-9) ft BGS</i>	<i>(9-14) ft BGS</i>
<i>Screen Depth:</i>							<i>(5.4-9) ft BGS</i>	<i>(10.4-14) ft BGS</i>
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78		0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X		0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45		0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140		1.8	0.50 U	0.11 J
1,2,4-Trichlorobenzene	ug/L	70	70	30		2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L					2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200		0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330		0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200		0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300			0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120			0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17		0.070 J	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45		2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15		0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35		0.090 J	0.50 U	0.50 U
m&p-Xylenes	ug/L					0.22 J	0.50 U	0.50 U

Field Parameters

Conductivity, field	mS/cm		0.905	0.777	0.750	0.744	
Dissolved oxygen (DO), field	mg/L		0.16	0.67	1.28	1.52	
Oxidation reduction potential (ORP), field	millivolts		5	37	15	22	
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	6.87	7.63	7.76
Temperature, field	Deg C			11.76	14.62	14.14	13.12
Turbidity (field)	NTU			9.24	157	376	3.01
Pump Intake	ft bgs			8	13	18	23
Pumping Rate	mg/min			350	250	300	300

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Ground</u>	MW 107				
Sample Identification:		VAS-56393-111210-DD-023	VAS-56393-111210-DD-020	VAS-56393-111210-DD-018	VAS-56393-111110-DD-015	VAS-56393-111110-DD-013
Sample Date:		11/12/2010	11/12/2010	11/12/2010	11/11/2010	11/11/2010
Sample Depth:		(19-24) ft BGS	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS
Screen Depth:	<u>Units</u>	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS

Metals

Aluminum	ug/L	8.9	48.6	88.2 ^{ab}	1670 ^{ab}	1310 ^{ab}
Antimony	ug/L	0.050 J	0.049 J	0.064	0.167	0.21
Arsenic	ug/L	0.3 J	0.4 J	0.8	3.9	3.4
Barium	ug/L	77.1	76.8	86.0	126	123
Beryllium	ug/L	0.020 U	0.020 U	0.020 U	0.13	0.113
Cadmium	ug/L	0.012 J	0.008 J	0.012 J	0.13	0.129
Chromium	ug/L	0.30	1.61	1.37	19.1 ^c	34.5 ^c
Cobalt	ug/L	1.660	1.790	1.560	5.46	8.47
Copper	ug/L	0.63	1.24	1.70	19.9	27.5 ^c
Iron	ug/L	146	734 ^{ab}	1250 ^{ab}	16300 ^{ab}	16800 ^{ab}
Lead	ug/L	0.043	0.187	0.494	10.2 ^{ab}	7.25 ^{ab}
Magnesium	ug/L	25500	26000	26700	42600	44800
Manganese	ug/L	370 ^{ab}	259 ^{ab}	228 ^{ab}	685 ^{ab}	1030 ^{ab}
Mercury	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	ug/L	4.14	3.87	3.89	14.7	25.6
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.004 J	0.020 U	0.020 U	0.013 J	0.025
Sodium	ug/L	23100	23400	25400	32700	33300
Thallium	ug/L	0.050	0.026	0.028	0.135	0.139
Vanadium	ug/L	0.10 J	0.20	0.47	6.49 ^a	4.55 ^a
Zinc	ug/L	1.8	6.9	4.7	56.8	197

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.039 U	0.040 U	0.040 U	0.040 U	0.050 U
Aroclor-1232 (PCB-1232)	ug/L	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U				
Aroclor-1254 (PCB-1254)	ug/L	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.020 U				

Volatile Organic Compounds

Acetone	ug/L	20 U				
Benzene	ug/L	0.50 U	0.07 J	0.06 J	0.07 J	0.12 J
Bromobenzene	ug/L	2.0 U				
Bromodichloromethane	ug/L	0.50 U				
Bromoform	ug/L	0.50 U				
Bromomethane (Methyl bromide)	ug/L	0.50 U				

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<u>Sample Location:</u>	<u>Ground</u>	<u>MW 107</u> VAS-56393-111210-DD-023	<u>MW 107</u> VAS-56393-111210-DD-020	<u>MW 107</u> VAS-56393-111210-DD-018	<u>MW 107</u> VAS-56393-111110-DD-015	<u>MW 107</u> VAS-56393-111110-DD-013
<u>Sample Identification:</u>		11/12/2010 (19-24) ft BGS	11/12/2010 (24-29) ft BGS	11/12/2010 (29-34) ft BGS	11/11/2010 (34-39) ft BGS	11/11/2010 (39-44) ft BGS
<u>Sample Depth:</u>						
<u>Screen Depth:</u>	<u>Units</u>	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U				
N-Butylbenzene	ug/L	2.0 U				
Carbon disulfide	ug/L	0.50 U				
Carbon tetrachloride	ug/L	0.50 U				
Chlorobenzene	ug/L	0.50 U				
Chlorobromomethane	ug/L	0.50 U				
Chloroethane	ug/L	0.50 U				
Chloroform (Trichloromethane)	ug/L	0.50 U				
Chloromethane (Methyl chloride)	ug/L	0.50 U				
2-Chlorotoluene	ug/L	2.0 U				
4-Chlorotoluene	ug/L	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U				
Dibromochloromethane	ug/L	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U				
Dibromomethane	ug/L	0.50 U				
1,2-Dichlorobenzene	ug/L	0.50 U				
1,3-Dichlorobenzene	ug/L	0.50 U				
1,4-Dichlorobenzene	ug/L	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U				
1,1-Dichloroethane	ug/L	0.50 U				
1,2-Dichloroethane	ug/L	0.50 U				
1,1-Dichloroethene	ug/L	0.50 U				
cis-1,2-Dichloroethene	ug/L	0.50 U				
trans-1,2-Dichloroethene	ug/L	0.50 U				
1,3-Dichloropropane	ug/L	0.50 U				
1,2-Dichloropropane	ug/L	0.50 U				
2,2-Dichloropropane	ug/L	0.50 U				
1,1-Dichloropropene	ug/L	0.50 U				
cis-1,3-Dichloropropene	ug/L	0.50 U				
trans-1,3-Dichloropropene	ug/L	0.50 U				
Ethylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.06 J
Hexachlorobutadiene	ug/L	2.0 U				
2-Hexanone	ug/L	20 U				
Isopropyl benzene	ug/L	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U				
Methylene chloride	ug/L	2.0 U				
Naphthalene	ug/L	2.0 U				
N-Propylbenzene	ug/L	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U				
Styrene	ug/L	0.50 U				
tert-Butylbenzene	ug/L	2.0 U				

TABLE 7

MW-107
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 107</i>				
<i>Sample Identification:</i>		VAS-56393-111210-DD-023	VAS-56393-111210-DD-020	VAS-56393-111210-DD-018	VAS-56393-111110-DD-015	VAS-56393-111110-DD-013
<i>Sample Date:</i>		11/12/2010	11/12/2010	11/12/2010	11/12/2010	11/12/2010
<i>Sample Depth:</i>		(19-24) ft BGS	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U				
1,1,1,2-Tetrachloroethane	ug/L	0.50 U				
Tetrachloroethene	ug/L	0.50 U				
Toluene	ug/L	0.4 J	0.15 J	0.28 J	0.39 J	0.73
1,2,4-Trichlorobenzene	ug/L	2.0 U				
1,2,3-Trichlorobenzene	ug/L	2.0 U				
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.09 J	0.08 J
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethylene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U				
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U				
m&p-Xylenes	ug/L	0.50 U				
<i>Field Parameters</i>						
Conductivity, field	mS/cm	0.744	0.732	0.754	0.869	0.874
Dissolved oxygen (DO), field	mg/L	1.52	1.52	1.81	2.12	1.95
Oxidation reduction potential (ORP), field	millivolts	22	-19	-23	-70	-86
pH, field	s.u.	7.81	7.89	7.93	7.16	7.20
Temperature, field	Deg C	13.12	11.89	11.4	14.33	15.6
Turbidity (field)	NTU	3.01	1000 U	1000 U	1000 U	1000 U
Pump Intake	ft bgs	23	28	33	38	43
Pumping Rate	mg/min	300	250	250	300	100

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^{a)}</i>			<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>
	<i>Sample Identification:</i>	<i>Sample Date:</i>	<i>Sample Depth:</i>	<i>Screen Depth:</i>	VAS-56393-111810-DD-076 11/18/2010 (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111810-DD-075 11/18/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111710-DD-068 11/17/2010 (14-19) ft BGS (15.4-19) ft BGS
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>			
Metals							
Aluminum	ug/L	50	50		12.6	13.2	19.0
Antimony	ug/L	6	6	130	0.089 N	0.047 J,N	0.102 N
Arsenic	ug/L	10	10	150	0.3 J,N	0.2 J,N	0.1 J
Barium	ug/L	2000	2000	1400	88.7	84.6	80.5
Beryllium	ug/L	4	4	41	0.020 U	0.020 U	0.020 U
Cadmium	ug/L	5	5	5.1	0.009 J	0.007 J	0.011 J
Chromium	ug/L	100	100	11	0.48	0.71	0.90
Cobalt	ug/L	40	100	100	0.834	0.758	2.070
Copper	ug/L	1000	1000	23	0.42	0.57	0.41 N
Iron	ug/L	300	300		84.8	133	166
Lead	ug/L	4	4	34	0.052	0.051	0.051
Magnesium	ug/L	400000	1100000		26400	25400	26700
Manganese	ug/L	50	50	5200	447 ^{ab}	332 ^{ab}	790 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	3.04	3.76	7.62 N
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.020 U	0.020 U	0.020 U
Sodium	ug/L	120000	350000		21800	22900	23000
Thallium	ug/L	2	2	3.7	0.042	0.060	0.090
Vanadium	ug/L	4.5	62	12	0.24	0.18 J	0.07 J
Zinc	ug/L	2400	5000	310	1.9	4.0	2.6
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.039 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.012 JP	0.020 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.10 J	0.50 U	0.15 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria^(a)</i>				<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111810-DD-076 11/18/2010 (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111810-DD-075 11/18/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111710-DD-068 11/17/2010 (14-19) ft BGS (15.4-19) ft BGS	VAS-56393-111710-DD-069 11/17/2010 (14-19) ft BGS (15.4-19) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.070 J	0.50 U
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.080 J	0.50 U	0.10 J	0.090 J
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	2.0 U	2.0 U	20 U	20 U
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location: Sample Identification: Sample Date: Sample Depth: Screen Depth:	<i>Groundwater Cleanup Criteria⁽¹⁾</i>				<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>	<i>MW 108</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111810-DD-076 11/18/2010 (4-9) ft BGS (5.4-9) ft BGS	VAS-56393-111810-DD-075 11/18/2010 (9-14) ft BGS (10.4-14) ft BGS	VAS-56393-111710-DD-068 11/17/2010 (14-19) ft BGS (15.4-19) ft BGS	VAS-56393-111710-DD-069 11/17/2010 (14-19) ft BGS (15.4-19) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.26 J	0.15 J	0.29 J	0.31 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.11 J	0.50 U	0.13 J	0.13 J
<i>Field Parameters</i>								
Conductivity, field	mS/cm				0.751	0.721	0.723	0.723
Dissolved oxygen (DO), field	mg/L				3.24	2.02	0.9	0.9
Oxidation reduction potential (ORP), field	millivolts				9	-26	-78	-78
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.33	7.27	7.43	7.43
Temperature, field	Deg C				11.2	12.14	12.63	12.63
Turbidity (field)	NTU				2.45	5.13	8.8	8.8
Pump Intake	ft bgs				8	13	18	18
Pumping Rate	mg/min				100	225	200	200

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 108	Highest Value				
Sample Identification:		VAS-56393-111710-DD-066	VAS-56393-111710-DD-064	VAS-56393-111710-DD-062	VAS-56393-111710-DD-060	VAS-56393-111710-DD-056	
Sample Date:		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	
Sample Depth:		(19-24) ft BGS	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	
Screen Depth:	Units	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	
Metals							
Aluminum	ug/L	27.3	55.4 ^{ab}	554 ^{ab}	45.7	2770 ^{ab}	2770
Antimony	ug/L	0.114 N	0.076 N	0.097 N	0.097 N	0.166 N	0.166
Arsenic	ug/L	0.4 J	0.9	14.8 ^{ab}	0.4 J	9.2	14.8
Barium	ug/L	91.8	88.0	131	128	614	614
Beryllium	ug/L	0.020 U	0.020 U	0.052	0.020 U	0.276	0.276
Cadmium	ug/L	0.008 J	0.011 J	0.042	0.010 J	0.392	0.392
Chromium	ug/L	1.48	0.99	5.24	1.13	62.7 ^c	62.7
Cobalt	ug/L	4.120	2.700	3.780	1.600	16.0	16
Copper	ug/L	0.57 N	0.88 N	5.74 N	0.79 N	38.8 N ^c	38.8
Iron	ug/L	352 ^{ab}	696 ^{ab}	10500 ^{ab}	2060 ^{ab}	28000 ^{ab}	28000
Lead	ug/L	0.137	0.331	5.280 ^{ab}	0.162	13.0 ^{ab}	13
Magnesium	ug/L	26000	26000	29000	29400	124000	124000
Manganese	ug/L	948 ^{ab}	393 ^{ab}	530 ^{ab}	313 ^{ab}	3750 ^{ab}	3750
Mercury	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.05 J ^c	0.05
Nickel	ug/L	8.90 N	5.54 N	7.04 N	7.02 N	43.8 N	43.8
Selenium	ug/L	1.0 U	1.0 U	0.3 J,N	0.4 J,N	1.0 U	0.5
Silver	ug/L	0.020 U	0.020 U	0.006 J	0.020 U	0.020	0.02
Sodium	ug/L	22600	23000	26600	42200	57700	57700
Thallium	ug/L	0.077	0.057	0.127	0.048	0.381	0.381
Vanadium	ug/L	0.21	0.35	2.92	0.27	8.06 ^a	8.06
Zinc	ug/L	2.3	4.8	25.4	5.4	166	166
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.020 U	N/A				
Aroclor-1221 (PCB-1221)	ug/L	0.039 U	N/A				
Aroclor-1232 (PCB-1232)	ug/L	0.020 U	N/A				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U	N/A				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U	0.012				
Aroclor-1254 (PCB-1254)	ug/L	0.020 U	0.020 U	0.0074 J	0.0059 J	0.039	0.039
Aroclor-1260 (PCB-1260)	ug/L	0.020 U	N/A				
Volatile Organic Compounds							
Acetone	ug/L	20 U	N/A				
Benzene	ug/L	0.080 J	0.50 U	0.090 J	0.50 U	0.14 J	0.15
Bromobenzene	ug/L	2.0 U	N/A				
Bromodichloromethane	ug/L	0.50 U	N/A				
Bromoform	ug/L	0.50 U	N/A				
Bromomethane (Methyl bromide)	ug/L	0.50 U	N/A				

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 108	MW 108	Highest Value				
Sample Identification:		VAS-56393-111710-DD-066	VAS-56393-111710-DD-064	VAS-56393-111710-DD-062	VAS-56393-111710-DD-060	VAS-56393-111710-DD-056		
Sample Date:		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	
Sample Depth:		(19-24) ft BGS	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	(40-44) ft BGS	
Screen Depth:	Units	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS		
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U	20 U	N/A				
N-Butylbenzene	ug/L	2.0 U	2.0 U	N/A				
Carbon disulfide	ug/L	0.50 U	0.13 J	0.13				
Carbon tetrachloride	ug/L	0.50 U	0.50 U	N/A				
Chlorobenzene	ug/L	0.50 U	0.50 U	N/A				
Chlorobromomethane	ug/L	0.50 U	0.50 U	N/A				
Chloroethane	ug/L	0.50 U	0.50 U	N/A				
Chloroform (Trichloromethane)	ug/L	0.50 U	0.50 U	N/A				
Chloromethane (Methyl chloride)	ug/L	0.50 U	0.50 U	0.07				
2-Chlorotoluene	ug/L	2.0 U	2.0 U	N/A				
4-Chlorotoluene	ug/L	2.0 U	2.0 U	N/A				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U	2.0 U	N/A				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U	2.0 U	N/A				
Dibromochloromethane	ug/L	0.50 U	0.50 U	N/A				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U	2.0 U	N/A				
Dibromomethane	ug/L	0.50 U	0.50 U	N/A				
1,2-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A				
1,3-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A				
1,4-Dichlorobenzene	ug/L	0.50 U	0.50 U	N/A				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U	0.50 U	N/A				
1,1-Dichloroethane	ug/L	0.50 U	0.16 J	0.16				
1,2-Dichloroethane	ug/L	0.50 U	0.50 U	N/A				
1,1-Dichloroethene	ug/L	0.50 U	0.50 U	N/A				
cis-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	N/A				
trans-1,2-Dichloroethene	ug/L	0.50 U	0.50 U	N/A				
1,3-Dichloropropane	ug/L	0.50 U	0.50 U	N/A				
1,2-Dichloropropane	ug/L	0.50 U	0.50 U	N/A				
2,2-Dichloropropane	ug/L	0.50 U	0.50 U	N/A				
1,1-Dichloropropene	ug/L	0.50 U	0.50 U	N/A				
cis-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	N/A				
trans-1,3-Dichloropropene	ug/L	0.50 U	0.50 U	N/A				
Ethylbenzene	ug/L	0.050 J	0.50 U	0.50 U	0.50 U	0.50 U	0.11 J	0.11
Hexachlorobutadiene	ug/L	2.0 U	2.0 U	N/A				
2-Hexanone	ug/L	20 U	20 U	N/A				
Isopropyl benzene	ug/L	2.0 U	2.0 U	N/A				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U	20 U	N/A				
Methylene chloride	ug/L	2.0 U	2.0 U	N/A				
Naphthalene	ug/L	2.0 U	0.17 J	0.17				
N-Propylbenzene	ug/L	2.0 U	2.0 U	N/A				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U	2.0 U	N/A				
Styrene	ug/L	0.50 U	0.50 U	N/A				
tert-Butylbenzene	ug/L	2.0 U	2.0 U	N/A				

TABLE 8

MW-108
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 108	Highest Value				
Sample Identification:		VAS-56393-111710-DD-066	VAS-56393-111710-DD-064	VAS-56393-111710-DD-062	VAS-56393-111710-DD-060	VAS-56393-111710-DD-056	
Sample Date:		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010	
Sample Depth:		(19-24) ft BGS	(24-29) ft BGS	(29-34) ft BGS	(34-39) ft BGS	(39-44) ft BGS	
Screen Depth:	Units	(20.4-24) ft BGS	(25.4-29) ft BGS	(30.4-34) ft BGS	(35.4-39) ft BGS	(40.4-44) ft BGS	
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	N/A				
1,1,2,2-Tetrachloroethane	ug/L	0.50 U	N/A				
Tetrachloroethene	ug/L	0.50 U	N/A				
Toluene	ug/L	0.20 J	0.11 J	0.14 J	0.060 J	0.41 J	0.41
1,2,4-Trichlorobenzene	ug/L	2.0 U	N/A				
1,2,3-Trichlorobenzene	ug/L	2.0 U	N/A				
1,1,1-Trichloroethane	ug/L	0.50 U	0.50 U	0.50 U	0.32 J	0.50 U	0.32
1,1,2-Trichloroethane	ug/L	0.50 U	N/A				
Trichloroethene	ug/L	0.50 U	N/A				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U	N/A				
1,2,3-Trichloropropane	ug/L	0.50 U	N/A				
1,2,4-Trimethylbenzene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	0.070 J	0.07
1,3,5-Trimethylbenzene	ug/L	2.0 U	N/A				
Vinyl chloride	ug/L	0.50 U	N/A				
o-Xylene	ug/L	0.50 U	N/A				
m&p-Xylenes	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.15 J	0.15
Field Parameters							
Conductivity, field	mS/cm	0.716	0.696	0.715	0.875	0.966	0.966
Dissolved oxygen (DO), field	mg/L	1.34	1.73	1.64	1.22	0.33	3.24
Oxidation reduction potential (ORP), field	millivolts	-70	-52	-67	-109	-125	9
pH, field	s.u.	7.37	7.40	7.37	7.25	7.28	7.43
Temperature, field	Deg C	12.51	12.7	12.99	12.26	10.9	12.99
Turbidity (field)	NTU	9.33	49.8	1000 U	23.4	1000 U	49.8
Pump Intake	ft bgs	23	28	33	38	43	43
Pumping Rate	mg/min	150	200	200	200	200	225

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria</u> ⁽¹⁾			MW 109	MW 109	MW 109	MW 109
	Units	a	b	c	VAS-56393-111810-DD-077 11/18/2010 (7-12) ft BGS (8.4-12) ft BGS	VAS-56393-111810-DD-074 11/18/2010 (12-17) ft BGS (13.4-17) ft BGS	VAS-56393-111710-DD-070 11/17/2010 (17-22) ft BGS (18.4-22) ft BGS
Metals							
Aluminum	ug/L	50	50		686 ^{ab}	302 ^{ab}	48.4
Antimony	ug/L	6	6	130	0.079 N	0.083 N	0.078 N
Arsenic	ug/L	10	10	150	1.0	0.8	0.5 J
Barium	ug/L	2000	2000	1400	94.7	74.7	67.4
Beryllium	ug/L	4	4	41	0.043	0.022	0.020 U
Cadmium	ug/L	5	5	5.1	0.112	0.031	0.021
Chromium	ug/L	100	100	11	2.26	2.01	0.72
Cobalt	ug/L	40	100	100	2.060	2.100	1.340
Copper	ug/L	1000	1000	23	3.49	1.88	0.87 N
Iron	ug/L	300	300		2160 ^{ab}	1430 ^{ab}	327 ^{ab}
Lead	ug/L	4	4	34	1.920	0.897	0.162
Magnesium	ug/L	400000	1100000		32200	29200	27300
Manganese	ug/L	50	50	5200	1280 ^{ab}	716 ^{ab}	506 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	9.75	9.54	7.02 N
Selenium	ug/L	50	50	5	1.0 U	1.0 U	0.3 J,N
Silver	ug/L	34	98	0.2	0.005 J	0.020 U	0.020 U
Sodium	ug/L	120000	350000		17900	22200	23200
Thallium	ug/L	2	2	3.7	0.141	0.142	0.086
Vanadium	ug/L	4.5	62	12	1.96	1.16	0.28
Zinc	ug/L	2400	5000	310	13.9	17.7	10.6
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.040 U	0.062 U	0.040 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.031 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.50 U	0.50 U	0.12 J
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>				<i>MW 109</i>	<i>MW 109</i>	<i>MW 109</i>	<i>MW 109</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111810-DD-077 11/18/2010 (7-12) ft BGS (8.4-12) ft BGS	VAS-56393-111810-DD-074 11/18/2010 (12-17) ft BGS (13.4-17) ft BGS	VAS-56393-111710-DD-070 11/17/2010 (17-22) ft BGS (18.4-22) ft BGS	VAS-56393-111710-DD-067 11/17/2010 (22-27) ft BGS (23.4-27) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U	20 U
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.50 U	0.11 J	0.50 U
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.50 U	0.50 U	0.060 J	0.50 U
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	20 U	20 U	20 U	20 U
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U	2.0 U

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>				<i>MW 109</i>	<i>MW 109</i>	<i>MW 109</i>	<i>MW 109</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	VAS-56393-111810-DD-077 11/18/2010 (7-12) ft BGS (8.4-12) ft BGS	VAS-56393-111810-DD-074 11/18/2010 (12-17) ft BGS (13.4-17) ft BGS	VAS-56393-111710-DD-070 11/17/2010 (17-22) ft BGS (18.4-22) ft BGS	VAS-56393-111710-DD-067 11/17/2010 (22-27) ft BGS (23.4-27) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.50 U	0.16 J	0.23 J	0.14 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.50 U	0.50 U	0.11 J	0.50 U
<i>Field Parameters</i>								
Conductivity, field	mS/cm				0.963	0.805	0.729	0.701
Dissolved oxygen (DO), field	mg/L				0.64	5.28	1	1.39
Oxidation reduction potential (ORP), field	millivolts				50	79	-10	-1
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	6.81	7.19	7.31	7.37
Temperature, field	Deg C				10.84	8.94	11.89	12.11
Turbidity (field)	NTU				105	216	9.42	26.9
Pump Intake	ft bgs				11	16	21	26
Pumping Rate	mg/min				200	< 50	200	180

Notes:

- (1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (l)

[REDACTED] Highest concentration observed for associated analyte

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 109				
Sample Identification:		VAS-56393-111710-DD-065	VAS-56393-111710-DD-063	VAS-56393-111710-DD-061	VAS-56393-111710-DD-057	VAS-56393-111710-DD-058
Sample Date:		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Sample Depth:		(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS
Screen Depth:	Units	(28.4-32) ft BGS	(33.4-37) ft BGS	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS
Metals						
Aluminum	ug/L	198 ^{ab}	4560 ^{ab}	8120 ^{ab}	1040 ^{ab}	1010 ^{ab}
Antimony	ug/L	0.120 N	0.190 N	0.229 N	0.142 N	0.134 N
Arsenic	ug/L	0.8	4.7	5.7	2.2	2.2
Barium	ug/L	80.1	194	290	99.6	96.0
Beryllium	ug/L	0.020 U	0.463	0.779	0.092	0.063
Cadmium	ug/L	0.013 J	0.220	0.398	0.066	0.040
Chromium	ug/L	2.43	42.1 ^c	85.3 ^c	16.7 ^c	14.7 ^c
Cobalt	ug/L	3.570	14.4	19.6	4.100	3.720
Copper	ug/L	2.00 N	38.7 N ^c	71.8 N ^c	12.9 N	10.7 N
Iron	ug/L	1470 ^{ab}	38200 ^{ab}	62300 ^{ab}	9500 ^{ab}	8240 ^{ab}
Lead	ug/L	0.663	21.9 ^{ab}	37.6 ^{abc}	3.870	3.270
Magnesium	ug/L	27400	60400	87100	32100	30300
Manganese	ug/L	635 ^{ab}	1770 ^{ab}	2910 ^{ab}	529 ^{ab}	459 ^{ab}
Mercury	ug/L	0.20 U	0.06 J ^c	0.11 J ^c	0.20 U	0.20 U
Nickel	ug/L	9.61 N	31.9 N	56.5 N	14.7 N	13.4 N
Selenium	ug/L	1.0 U				
Silver	ug/L	0.020 U	0.029	0.051	0.018 J	0.011 J
Sodium	ug/L	23300	24300	25500	32600	32000
Thallium	ug/L	0.050	0.279	0.424	0.071	0.066
Vanadium	ug/L	0.64	11.1 ^a	15.0 ^{ac}	3.04	2.76
Zinc	ug/L	21.5	309	719 ^c	175	144
PCBs						
Aroclor-1016 (PCB-1016)	ug/L	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.039 U				
Aroclor-1232 (PCB-1232)	ug/L	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U				
Aroclor-1254 (PCB-1254)	ug/L	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.020 U				
Volatile Organic Compounds						
Acetone	ug/L	20 U				
Benzene	ug/L	0.12 J	0.14 J	0.15 J	0.070 J	0.070 J
Bromobenzene	ug/L	2.0 U				
Bromodichloromethane	ug/L	0.50 U				
Bromoform	ug/L	0.50 U				
Bromomethane (Methyl bromide)	ug/L	0.50 U				

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Ground</i>	<i>MW 109</i> VAS-56393-111710-DD-065	<i>MW 109</i> VAS-56393-111710-DD-063	<i>MW 109</i> VAS-56393-111710-DD-061	<i>MW 109</i> VAS-56393-111710-DD-057	<i>MW 109</i> VAS-56393-111710-DD-058
<i>Sample Identification:</i>						
<i>Sample Date:</i>		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
<i>Sample Depth:</i>		(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(28.4-32) ft BGS	(33.4-37) ft BGS	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U				
N-Butylbenzene	ug/L	2.0 U				
Carbon disulfide	ug/L	0.50 U				
Carbon tetrachloride	ug/L	0.50 U				
Chlorobenzene	ug/L	0.50 U				
Chlorobromomethane	ug/L	0.50 U				
Chloroethane	ug/L	0.50 U				
Chloroform (Trichloromethane)	ug/L	0.50 U				
Chloromethane (Methyl chloride)	ug/L	0.50 U				
2-Chlorotoluene	ug/L	2.0 U				
4-Chlorotoluene	ug/L	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U				
Dibromochloromethane	ug/L	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U				
Dibromomethane	ug/L	0.50 U				
1,2-Dichlorobenzene	ug/L	0.50 U				
1,3-Dichlorobenzene	ug/L	0.50 U				
1,4-Dichlorobenzene	ug/L	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U				
1,1-Dichloroethane	ug/L	0.50 U				
1,2-Dichloroethane	ug/L	0.50 U				
1,1-Dichloroethene	ug/L	0.50 U				
cis-1,2-Dichloroethene	ug/L	0.50 U				
trans-1,2-Dichloroethene	ug/L	0.50 U				
1,3-Dichloropropane	ug/L	0.50 U				
1,2-Dichloropropane	ug/L	0.50 U				
2,2-Dichloropropane	ug/L	0.50 U				
1,1-Dichloropropene	ug/L	0.50 U				
cis-1,3-Dichloropropene	ug/L	0.50 U				
trans-1,3-Dichloropropene	ug/L	0.50 U				
Ethylbenzene	ug/L	0.070 J	0.090 J	0.10 J	0.060 J	0.050 U
Hexachlorobutadiene	ug/L	2.0 U				
2-Hexanone	ug/L	20 U				
Isopropyl benzene	ug/L	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U				
Methylene chloride	ug/L	2.0 U				
Naphthalene	ug/L	2.0 U				
N-Propylbenzene	ug/L	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U				
Styrene	ug/L	0.50 U				
tert-Butylbenzene	ug/L	2.0 U				

TABLE 9

MW-109
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 109				
Sample Identification:		VAS-56393-111710-DD-065	VAS-56393-111710-DD-063	VAS-56393-111710-DD-061	VAS-56393-111710-DD-057	VAS-56393-111710-DD-058
Sample Date:		11/17/2010	11/17/2010	11/17/2010	11/17/2010	11/17/2010
Sample Depth:		(27-32) ft BGS	(32-37) ft BGS	(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS
Screen Depth:	Units	(28.4-32) ft BGS	(33.4-37) ft BGS	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U				
1,1,1,2-Tetrachloroethane	ug/L	0.50 U				
Tetrachloroethene	ug/L	0.50 U				
Toluene	ug/L	0.26 J	0.32 J	0.34 J	0.25 J	0.24 J
1,2,4-Trichlorobenzene	ug/L	2.0 U				
1,2,3-Trichlorobenzene	ug/L	2.0 U				
1,1,1-Trichloroethane	ug/L	0.50 U				
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U				
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U				
m&p-Xylenes	ug/L	0.11 J	0.11 J	0.13 J	0.50 U	0.50 U
Field Parameters						
Conductivity, field	mS/cm	0.693	0.685	0.683	0.692	0.692
Dissolved oxygen (DO), field	mg/L	1.01	1.16	1.02	0.67	0.67
Oxidation reduction potential (ORP), field	millivolts	-61	-57	-64	.99	.99
pH, field	s.u.	7.56	7.55	7.50	7.60	7.60
Temperature, field	Deg C	12.44	12.39	11.61	9.71	9.71
Turbidity (field)	NTU	62.3	1000 U	1000 U	1000 U	1000 U
Pump Intake	ft bgs	31	36	41	46	46
Pumping Rate	mg/min	200	200	200	200	200

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)

[REDACTED] Highest concentration observed for associated analyte

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	<u>Groundwater Cleanup Criteria</u> ^(a)			MW 110 VAS-56393-111910-DD-096	MW 110 VAS-56393-111910-DD-094	MW 110 VAS-56393-111910-DD-092	MW 110 VAS-56393-111910-DD-090
Sample Identification:				11/19/2010 (17-22) ft BGS (18.4-22) ft BGS	11/19/2010 (22-27) ft BGS (23.4-27) ft BGS	11/19/2010 (27-32) ft BGS (28.4-32) ft BGS	11/19/2010 (32-37) ft BGS (33.4-37) ft BGS
Sample Date:							
Sample Depth:							
Screen Depth:							
Units	a	b	c				
Metals							
Aluminum	ug/L	50	50	12.9	211 ^{ab}	5.1	72.7 ^{ab}
Antimony	ug/L	6	6	0.035 J,N	0.057 N	0.033 J,N	0.043 J,N
Arsenic	ug/L	10	10	0.2 J,N	0.8 N	0.1 J,N	0.5 N
Barium	ug/L	2000	2000	1400	72.0	80.5	76.7
Beryllium	ug/L	4	4	41	0.020 U	0.006 J	0.020 U
Cadmium	ug/L	5	5	5.1	0.018 J	0.036	0.016 J
Chromium	ug/L	100	100	11	0.38	1.57	0.62
Cobalt	ug/L	40	100	100	0.312	0.873	0.430
Copper	ug/L	1000	1000	23	0.74	3.30	0.81
Iron	ug/L	300	300		70.3	1610 ^{ab}	73.2
Lead	ug/L	4	4	34	0.055	0.953	0.020 J
Magnesium	ug/L	400000	1100000		26800	29000	25700
Manganese	ug/L	50	50	5200	98.2 ^{ab}	202 ^{ab}	130 ^{ab}
Mercury	ug/L	2	2	0.0013	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	130	2.49	24.6	3.97
Selenium	ug/L	50	50	5	1.0 U	1.0 U	1.0 U
Silver	ug/L	34	98	0.2	0.020 U	0.020 U	0.020 U
Sodium	ug/L	120000	350000		23400	23000	23000
Thallium	ug/L	2	2	3.7	0.045	0.066	0.058
Vanadium	ug/L	4.5	62	12	0.11 J	0.91	0.08 J
Zinc	ug/L	2400	5000	310	3.5	14.5	4.7
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	0.039 U	0.040 U	0.039 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	0.0024 J	0.0036 J	0.0020 JP
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	0.020 U	0.020 U	0.020 U
Volatile Organic Compounds							
Acetone	ug/L	730	2100	1700	20 U	20 U	20 U
Benzene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U
Bromobenzene	ug/L	18	50		2.0 U	2.0 U	2.0 U
Bromodichloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromoform	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
Bromomethane (Methyl bromide)	ug/L	10	29	35	0.50 U	0.50 U	0.50 U

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location: Sample Identification: Sample Date: Sample Depth: Screen Depth:	<u>Groundwater Cleanup Criteria^(a)</u>			<u>MW 110</u> VAS-56393-111910-DD-096	<u>MW 110</u> VAS-56393-111910-DD-094	<u>MW 110</u> VAS-56393-111910-DD-092	<u>MW 110</u> VAS-56393-111910-DD-090
	<u>Units</u>	<u>a</u>	<u>b</u>	<u>11/19/2010</u> (17-22) ft BGS (18.4-22) ft BGS	<u>11/19/2010</u> (22-27) ft BGS (23.4-27) ft BGS	<u>11/19/2010</u> (27-32) ft BGS (28.4-32) ft BGS	<u>11/19/2010</u> (32-37) ft BGS (33.4-37) ft BGS
				<u>c</u>			
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	20 U	20 U	20 U
N-Butylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U
Carbon disulfide	ug/L	800	2300	ID	0.50 U	0.50 U	0.50 U
Carbon tetrachloride	ug/L	5	5	45	0.50 U	0.50 U	0.50 U
Chlorobenzene	ug/L	100	100	47	0.50 U	0.50 U	0.50 U
Chlorobromomethane	ug/L				0.50 U	0.50 U	0.50 U
Chloroethane	ug/L	430	1700	ID	0.50 U	0.50 U	0.50 U
Chloroform (Trichloromethane)	ug/L	80	80	170	0.50 U	0.50 U	0.50 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	0.50 U	0.080 J	0.50 U
2-Chlorotoluene	ug/L	150	420	ID	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	ug/L				2.0 U	2.0 U	2.0 U
Cymene (p-Isopropyltoluene)	ug/L				2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2		2.0 U	2.0 U	2.0 U
Dibromochloromethane	ug/L	80	80	ID	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	0.2	2.0 U	2.0 U	2.0 U
Dibromomethane	ug/L	80	230		0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	600	600	16	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	ug/L	6.6	19	38	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	ug/L	75	75	13	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	ug/L	880	2500	740	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	ug/L	5	5	360	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	ug/L	7	7	65	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	ug/L	70	70	620	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	0.50 U	0.50 U	0.50 U
1,3-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	ug/L	5	5	290	0.50 U	0.50 U	0.50 U
2,2-Dichloropropane	ug/L				0.50 U	0.50 U	0.50 U
1,1-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	ug/L				0.50 U	0.50 U	0.50 U
Ethylbenzene	ug/L	74	74	18	0.50 U	0.50 U	0.50 U
Hexachlorobutadiene	ug/L	15	42	0.05	2.0 U	2.0 U	2.0 U
2-Hexanone	ug/L	1000	2900		20 U	20 U	20 U
Isopropyl benzene	ug/L	800	2300	ID	2.0 U	2.0 U	2.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	20 U	20 U	20 U
Methylene chloride	ug/L	5	5	940	2.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	13	2.0 U	2.0 U	2.0 U
N-Propylbenzene	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U
2-Phenylbutane (sec-Butylbenzene)	ug/L	80	230	ID	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	100	80	0.50 U	0.50 U	0.50 U
tert-Butylbenzene	ug/L	80	230		2.0 U	2.0 U	2.0 U

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Groundwater Cleanup Criteria⁽¹⁾</i>				<i>MW 110</i>	<i>MW 110</i>	<i>MW 110</i>	<i>MW 110</i>
	<i>Units</i>	<i>a</i>	<i>b</i>	<i>c</i>	<i>VAS-56393-111910-DD-096</i>	<i>11/19/2010</i>	<i>11/19/2010</i>	<i>11/19/2010</i>
<i>Sample Identification:</i>					(17-22) ft BGS	(22-27) ft BGS	(27-32) ft BGS	(32-37) ft BGS
<i>Sample Date:</i>					<i>(18.4-22) ft BGS</i>	<i>(23.4-27) ft BGS</i>	<i>(28.4-32) ft BGS</i>	<i>(33.4-37) ft BGS</i>
<i>Sample Depth:</i>								
<i>Screen Depth:</i>								
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	0.50 U	0.50 U	0.50 U	0.50 U
1,1,1,2-Tetrachloroethane	ug/L	77	320	ID,X	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethylene	ug/L	5	5	45	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	ug/L	790	790	140	0.080 J	0.080 J	0.060 J	0.080 J
1,2,4-Trichlorobenzene	ug/L	70	70	30	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	ug/L				2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	ug/L	200	200	200	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	ug/L	5	5	330	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethylene	ug/L	5	5	200	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300		0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	42	120		0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	63	63	17	2.0 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	45	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	2	15	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	ug/L	280	280	35	0.50 U	0.50 U	0.50 U	0.50 U
m&p-Xylenes	ug/L				0.50 U	0.50 U	0.50 U	0.50 U
<i>Field Parameters</i>								
Conductivity, field	mS/cm				0.741	0.718	0.716	0.704
Dissolved oxygen (DO), field	mg/L				2.21	3.04	2.67	2.16
Oxidation reduction potential (ORP), field	millivolts				86	49	54	38
pH, field	s.u.	6.5 - 8.5	6.5 - 8.5	6.5 - 9.0	7.23	7.27	7.29	7.42
Temperature, field	Deg C				11.35	11.78	10.25	10.32
Turbidity (field)	NTU				6.56	75.9	3.91	39.4
Pump Intake	ft bgs				21	26	31	36
Pumping Rate	mg/min				200	300	220	300

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)
 [REDACTED] Highest concentration observed for associated analyte

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Group	MW 110				
Sample Identification:		VAS-56393-111910-DD-088	VAS-56393-111810-DD-082	VAS-56393-111810-DD-083	VAS-56393-111810-DD-080	VAS-56393-111810-DD-078
Sample Date:		11/19/2010	11/18/2010	11/18/2010	11/18/2010	11/18/2010
Sample Depth:		(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS	(47-52) ft BGS	(52-57) ft BGS
Screen Depth:	Units	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS	(48.4-52) ft BGS	(53.4-57) ft BGS

Metals

Aluminum	ug/L	18.5	5.8	5.0	17.7	1440 ^{ab}
Antimony	ug/L	0.044 J,N	0.053 N	0.054 N	0.042 J,N	0.191 N
Arsenic	ug/L	0.2 J,N	0.2 J,N	0.2 J,N	0.1 J,N	4.2
Barium	ug/L	89.1	88.5	88.0	88.6	114
Beryllium	ug/L	0.020 U	0.020 U	0.020 U	0.020 U	0.109
Cadmium	ug/L	0.008 J	0.008 J	0.010 J	0.007 J	0.118
Chromium	ug/L	0.33	0.45	0.42	0.82	18.1 ^c
Cobalt	ug/L	0.759	0.787	0.797	1.810	4.660
Copper	ug/L	0.89	0.60	0.66	0.88	17.6
Iron	ug/L	273	88.3	78.7	202	11900 ^{ab}
Lead	ug/L	0.080	0.024	0.026	0.105	7.660 ^{ab}
Magnesium	ug/L	25300	24800	24600	24800	34300
Manganese	ug/L	79.8 ^{ab}	82.8 ^{ab}	80.1 ^{ab}	122 ^{ab}	762 ^{ab}
Mercury	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	ug/L	2.43	2.97	2.60	2.64	19.1
Selenium	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Silver	ug/L	0.007 J	0.020 U	0.020 U	0.020 U	0.012 J
Sodium	ug/L	23400	22700	22100	22700	22500
Thallium	ug/L	0.022	0.018 J	0.017 J	0.016 J	0.152
Vanadium	ug/L	0.15 J	0.13 J	0.13 J	0.16 J	4.61 ^a
Zinc	ug/L	6.7	3.7	7.9	7.6	191

PCBs

Aroclor-1016 (PCB-1016)	ug/L	0.020 U				
Aroclor-1221 (PCB-1221)	ug/L	0.040 U				
Aroclor-1232 (PCB-1232)	ug/L	0.020 U				
Aroclor-1242 (PCB-1242)	ug/L	0.020 U				
Aroclor-1248 (PCB-1248)	ug/L	0.020 U				
Aroclor-1254 (PCB-1254)	ug/L	0.020 U				
Aroclor-1260 (PCB-1260)	ug/L	0.020 U				

Volatile Organic Compounds

Acetone	ug/L	20 U				
Benzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.080 J
Bromobenzene	ug/L	2.0 U				
Bromodichloromethane	ug/L	0.50 U				
Bromoform	ug/L	0.50 U				
Bromomethane (Methyl bromide)	ug/L	0.50 U				

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>Sample Location:</i>	<i>Group</i>	<i>MW 110</i>				
<i>Sample Identification:</i>		VAS-56393-111910-DD-088	VAS-56393-111810-DD-082	VAS-56393-111810-DD-083	VAS-56393-111810-DD-080	VAS-56393-111810-DD-078
<i>Sample Date:</i>		11/19/2010	11/18/2010	11/18/2010	11/18/2010	11/18/2010
<i>Sample Depth:</i>		(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS	(47-52) ft BGS	(52-57) ft BGS
<i>Screen Depth:</i>	<i>Units</i>	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS	(48.4-52) ft BGS	(53.4-57) ft BGS
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	20 U				
N-Butylbenzene	ug/L	2.0 U				
Carbon disulfide	ug/L	0.50 U				
Carbon tetrachloride	ug/L	0.50 U				
Chlorobenzene	ug/L	0.50 U				
Chlorobromomethane	ug/L	0.50 U				
Chloroethane	ug/L	0.50 U				
Chloroform (Trichloromethane)	ug/L	0.50 U				
Chloromethane (Methyl chloride)	ug/L	0.50 U				
2-Chlorotoluene	ug/L	2.0 U				
4-Chlorotoluene	ug/L	2.0 U				
Cymene (p-Isopropyltoluene)	ug/L	2.0 U				
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	2.0 U				
Dibromochloromethane	ug/L	0.50 U				
1,2-Dibromoethane (Ethylene dibromide)	ug/L	2.0 U				
Dibromomethane	ug/L	0.50 U				
1,2-Dichlorobenzene	ug/L	0.50 U				
1,3-Dichlorobenzene	ug/L	0.50 U				
1,4-Dichlorobenzene	ug/L	0.50 U				
Dichlorodifluoromethane (CFC-12)	ug/L	0.50 U				
1,1-Dichloroethane	ug/L	0.50 U				
1,2-Dichloroethane	ug/L	0.50 U				
1,1-Dichloroethene	ug/L	0.50 U				
cis-1,2-Dichloroethene	ug/L	0.50 U				
trans-1,2-Dichloroethene	ug/L	0.50 U				
1,3-Dichloropropane	ug/L	0.50 U				
1,2-Dichloropropane	ug/L	0.50 U				
2,2-Dichloropropane	ug/L	0.50 U				
1,1-Dichloropropene	ug/L	0.50 U				
cis-1,3-Dichloropropene	ug/L	0.50 U				
trans-1,3-Dichloropropene	ug/L	0.50 U				
Ethylbenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.060 J
Hexachlorobutadiene	ug/L	2.0 U				
2-Hexanone	ug/L	20 U				
Isopropyl benzene	ug/L	2.0 U				
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	20 U				
Methylene chloride	ug/L	2.0 U				
Naphthalene	ug/L	2.0 U				
N-Propylbenzene	ug/L	2.0 U				
2-Phenylbutane (sec-Butylbenzene)	ug/L	2.0 U				
Styrene	ug/L	0.50 U				
tert-Butylbenzene	ug/L	2.0 U				

TABLE 10

MW-110
VAS ANALYTICAL RESULTS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

Sample Location:	Ground	MW 110				
Sample Identification:		VAS-56393-111910-DD-088	VAS-56393-111810-DD-082	VAS-56393-111810-DD-083	VAS-56393-111810-DD-080	VAS-56393-111810-DD-078
Sample Date:		11/19/2010	11/18/2010	11/18/2010	11/18/2010	11/18/2010
Sample Depth:		(37-42) ft BGS	(42-47) ft BGS	(42-47) ft BGS	(47-52) ft BGS	(52-57) ft BGS
Screen Depth:	Units	(38.4-42) ft BGS	(43.4-47) ft BGS	(43.4-47) ft BGS	(48.4-52) ft BGS	(53.4-57) ft BGS
1,1,2,2-Tetrachloroethane	ug/L	0.50 U				
1,1,1,2-Tetrachloroethane	ug/L	0.50 U				
Tetrachloroethylene	ug/L	0.50 U				
Toluene	ug/L	0.070 J	0.080 J	0.090 J	0.070 J	0.20 J
1,2,4-Trichlorobenzene	ug/L	2.0 U				
1,2,3-Trichlorobenzene	ug/L	2.0 U				
1,1,1-Trichloroethane	ug/L	0.50 U				
1,1,2-Trichloroethane	ug/L	0.50 U				
Trichloroethylene	ug/L	0.50 U				
Trichlorofluoromethane (CFC-11)	ug/L	0.50 U				
1,2,3-Trichloropropane	ug/L	0.50 U				
1,2,4-Trimethylbenzene	ug/L	2.0 U				
1,3,5-Trimethylbenzene	ug/L	2.0 U				
Vinyl chloride	ug/L	0.50 U				
o-Xylene	ug/L	0.50 U				
m&p-Xylenes	ug/L	0.50 U				
Field Parameters						
Conductivity, field	mS/cm	0.618	0.647	0.647	0.668	0.649
Dissolved oxygen (DO), field	mg/L	2.74	1.88	1.88	2.43	0.42
Oxidation reduction potential (ORP), field	millivolts	-38	11	11	6	-79
pH, field	s.u.	7.63	7.44	7.44	7.46	7.58
Temperature, field	Deg C	8.43	9.51	9.51	9.91	9.85
Turbidity (field)	NTU	1000 U	5.94	5.94	20.3	1000 U
Pump Intake	ft bgs	41	46	46	51	56
Pumping Rate	mg/min	200	250	250	200	200

Notes:

(1) Michigan Act 451, Part 201 Groundwater: Residential and Industrial-Commercial Generic Cleanup Criteria

a Residential & Commercial I Drinking Water

b Industrial & Commercial II, III, IV Drinking Water

c Groundwater Surface Water Interface

ft bgs feet below ground surface

U Not present at or above the associated value.

J Laboratory qualified as an estimated value.

[REDACTED] Concentration exceeds cleanup criteria (1)
 [REDACTED] Highest concentration observed for associated analyte

TABLE 11

PROPOSED MONITORING WELL SCREEN DEPTH INTERVALS
12th STREET LANDFILL
OTSEGO TOWNSHIP, MICHIGAN

<i>New Well ID</i>	<i>Proposed Screened Interval</i>	<i>Comments</i>
MW-101S	32 - 42 ft bgs	Proposed water table well
MW-101D	70 - 75 ft bgs	TAL Metals
MW-102S	5 - 15 ft bgs	PCBs, VOCs
MW-102D	40 - 45 ft bgs	PCBs, Hg
MW-103D	30 - 35 ft bgs	PCBs, Hg
MW-104S	20 - 25 ft bgs	PCBs, Hg
MW-104D	40 - 45 ft bgs	PCBs, Hg
MW-105D	42 - 47 ft bgs	Highest Hg, PCBs
MW-106S	5 - 15 ft bgs	PCBs
MW-106D	40 - 45 ft bgs	Highest PCBs, highest Hg
MW-107S	5 - 15 ft bgs	Highest Hg
MW-108S	5 - 15 ft bgs	Highest PCBs
MW-108D ⁽¹⁾	40 - 45 ft bgs	Highest Hg, highest PCBs, highest VOCs
MW-109D	22 - 27 ft bgs	Highest PCBs

Notes:

- (1) Proposed monitoring well MW-108D is in addition to the original scope of work, in accordance with CRA modification figure dated 11/10/2010.
- ft bgs feet below
- MW-101S shallow water table monitoring well
- MW-101D monitoring well installed to depth